Missouri Department of Natural Resources

Clean Water Commission
Water Protection Program

Meeting Minutes

June 7, 2006

MISSOURI CLEAN WATER COMMISSION MEETING
Department of Natural Resources
State Capitol Building
Hearing Room #3
Jefferson City, Missouri
June 7, 2006

MINUTES

Present
Thomas A. Herrmann, Chairman, Missouri Clean Water Commission
Kristin M. Perry, Commissioner, Missouri Clean Water Commission
Cosette D. Kelly, Commissioner, Missouri Clean Water Commission
Ron Hardecke, Commissioner, Missouri Clean Water Commission

Edward Galbraith, Director of Staff, Missouri Clean Water Commission
Bill Byran, Counsel, Missouri Clean Water Commission
Darlene Schaben, Acting Secretary to Commission, Missouri Clean Water Commission

Bob Bacon, ERC, Jefferson City, Missouri
Doyle Brown, MDC, Jefferson City, Missouri
Robert Brundage, Jefferson City, Missouri
Rich Burdge, DNR, Jefferson City, Missouri
Arax Corn, Jefferson City, Missouri
Chad Davis, Trenton Municipal Utilities, Trenton, Missouri
John Delashmit, EPA, Kansas City, Kansas
Joe Engeln, Department of Natural Resources, Jefferson City, Missouri
Jaci Ferguson, EPA, Springfield, Missouri
Karen Flournoy, EPA, Kansas City, Kansas
John Ford, DNR, Jefferson City, Missouri
Leslie Holloway, Missouri Farm Bureau, Jefferson City, Missouri
Angel Kruzen, Sierra Club
Rebecca Landewe, U.S. Environmental Protection Agency, Kansas City, Kansas
John Lodderhose, MSD, St. Louis, Missouri
Steve Mahfood, Jefferson City, Missouri
Sarah McMichael, DNR, Jefferson City, Missouri
Susan Myers, MSD, St. Louis, Missouri
Caitlyn Peel, HBA of St. Louis-Eastern, MO, St. Louis, Missouri
John D. Reece, Little Blue Valley Sewer District, Independence, Missouri
Candy Schilling, ERC, Jefferson City, Missouri
Phil Schroeder, DNR, Jefferson City, Missouri
Trent Stober, MEC Water Resources, Inc., Columbia, Missouri
Steve Taylor, Environmental Resources Coalition, Jefferson City, Missouri

Roger Walker, REGFORM, Jefferson City, Missouri
Mary West, Mo Public Utility Alliance, Columbia, Missouri
Betty Wyse, ERC, Jefferson City, Missouri

BEFORE THE CLEAN WATER COMMISSION
STATE OF MISSOURI

MEETING OF:
June 7, 2006

CONDUCTED BY:
CHAIRMAN THOMAS A. HERRMANN

Clean Water Commission
Department of Natural Resources

TRANSCRIBED FROM AUDIO TAPES BY:
CAROL A. BECKMANN, CSR

CHAIRMAN HERRMANN: Call to order the Missouri Clean Water Commission meeting. In lieu of a telephone conference, we thought we'd have better participation and a little less difficulty if we did this in person rather than on the telephone.

I've told a few people, I appreciate the design of this room because they've put the chairman behind a column here. Any of you people throw anything, I can use the column to deflect it.

I'll introduce to you the people at the head table. We have -- Let's start at the end of the table: Kristin Perry, Commissioner from Bowling Green. And, Ron Hardecke, Commissioner from Owensville. And -- who is that? Cosette Kelly, Commissioner from Independence. I'm Tom Herrmann, Chairman of the Commission. And next to me is Ed Galbraith, the Director of the Water Pollution Control Program. And Bill Bryan, Assistant Attorney General. And at the end of the table is Darlene Schaben, filling in for Melissa -- or, Malinda, whom I understand has had some little medical difficulties this morning.

We have a couple of people that I would like to recognize as being in attendance. Ed, would you --

MR. GALBRAITH: Thank you. Rob is the new branch chief for Water Pollution Control Branch and we're

very happy to have Rob on board. And he'll be starting June 9th.

I also would like to recognize from EPA, we have Karen Flournoy and Rebecca Landewe and John Delashmit.

CHAIRMAN HERRMANN: The first order of business is to approve the minutes of the May 3, 2006 meeting. And unless there are corrections, additions or deletions, the chair would entertain a motion to accept the minutes and enter them into the record.

COMMISSIONER KELLY: So moved.

CHAIRMAN HERRMANN: Moved and seconded. Any discussions? Minutes are accepted and will be entered into the record.

Item number 2, and the principal reason for being here, are the **Proposed Changes to the 303(d) Listing Methodology Document and Responses to Comments on Draft.**

We'll first have a presentation from the Staff and Phil.

MR. SCHROEDER: Okay. ... came about as a result of discussions we had with the stakeholders over the last several months, so you're going to get a combination of reasons for some of the changes that we're making.

In the end, what we're hoping to do, and the overall purpose of this, is to have a document that we can all live with; have a document that leads us to creating a list of waters that are truly waters that deserve to be on that list. Those are waters that have real data, real information, that point to problems that exist within those water bodies, and that those waters need some sort of action in order to correct the problems that we identify with them. We don't want to put things on the list that are going to cause unnecessary burdens on the community, cause unnecessary burdens on the Department, or cause unnecessary burdens on the Commission to try to undo some problems that those kind of decisions might make.

With that, I'd like to go through a PowerPoint presentation and we're going to do somewhat of a -- where is Sarah? Sarah, can you go ahead and get that PowerPoint started?

We're going to go through a little bit of history of the development, of the methodology, and I'm going to talk briefly about some of the major issues that we discussed with the stakeholders.

John is going -- John Ford, who is very instrumental in discussions with the stakeholders, is going to talk more in depth about the statistics that's involved

with looking at the data, and that's a very difficult area that we're going to have to think hard about. And I think you're going to hear some comments from some of the stakeholders later about how we use statistics in the process of listing.

While she's getting that PowerPoint up, let just kind of go through the packet, in terms of what's in there. What you'll find on page 217 is just really our briefing to you in terms of what we're doing today, what recommendation we're going to make to you, and what we're going to ask of you in terms of an action. Following that, on page 219, starts the document, the listing methodology document, showing all of the strike-outs and add-ins. In other words, the revisions that we've made in our discussions with stakeholders over the course of the last several months.

If you'll move on through the document -- on page 251, is, again, the document, but in this version there are no strike-outs or add-ins. In other words, it's a clean version showing what the document would look like if we were to approve or you were to approve all of the changes that we were -- are recommending today.

Then you move on further through the document on page 279, there is a list of six items that I'm going to go through later, after this presentation, the PowerPoint

presentation, as a way of kind of capping -- Oh, if you'll excuse me just for a second.

On page 279 is a list of six items that I'm going to kind of cap my discussion with you, which I think embodies six of the most major issues that we had discussions with, with the stakeholders. But I'll get back to that in a minute.

Okay. We've got the PowerPoint presentation up, so why don't I direct your attention to the slides. Let's just quickly go through a chronology of how the methodology document has developed over the time.

In September 2004 is when the Commission last adopted the listing methodology that we have and we were using in the past and used to create the first draft 303(d) list for 2004. However, EPA, in August of 2005, came out with some new guidance, and I mentioned that earlier, that showed that there were some discrepancies between what their agency believed needed to be done, in terms of listings and what our current approved methodology says would be done.

So in March 2006, the Clean Water Commission directed the Staff to begin making some efforts to revise the listing methodology document to reflect some of those changes at the federal level. In the process of making those changes, we had meetings with stakeholders, from March

through April of 2006. There were three meetings, public meetings that we had, which we had some good and lengthy discussions about the contents of the document. And during about the same time, up until the first week in May, we had an official 60-day comment period, where folks could write comments to us to say specifically what they felt were needed changes to the document.

Following May 5th, the Staff has been in the process of reviewing those comments submitted to us and making our final revisions to the document, which appears in your packet today.

Some of the changes that we discussed at some length with the stakeholders involved statistical procedures, and John is going to go into a little bit more detail about that, but basically what I wanted to say is that data can be interpreted in many different ways, and we need a process by which we can interpret that data in a consistent manner.

And we have a lot of flexibility here, EPA's guidance doesn't specify or dictate any specific statistical approach, but it has to be scientifically defensible, of course. And what, hopefully, we'll present to you today, and perhaps maybe with some comments from the stakeholders today, we'll be able to settle on what we feel is the most appropriate statistical approach. What you'll hear is that

in any statistical approach, you have to start with a hypothesis. And the hypothesis is very critical, in terms of

where the data will guide you in making a decision. The approach may be that -- and you'll hear this a little later in some of the discussion, that the hypothesis shall be that the water is impaired, whereas in some other cases, the hypothesis may be that the water is not impaired, and it makes a big difference where you start in your analysis of the data. And John will explain that a little bit more in a bit.

We also talked at great length about minimum sample size and with data age. These are the kind of things that can affect the reliability of data. We understand that very much. We take that very seriously, and we will not use data that we feel is unreliable or nonrepresentative of a water body. However, data age, in the small data set, doesn't necessarily render a data set unreliable. You have to make an analysis to make that determination, and that process involves looking at the data very closely and determining how it was collected or, more specifically, what sort of events occurred after that data was collected that might change its reliability.

In other words, if there was a significant event that occurred in a water body following when data was

collected, that may very well render the data as unreliable and unsuitable for use. In that case, we would set the data aside, basically box it up, send it over to archives, and say we don't need to use this data. We will not use this data, it's unreliable. And we would use whatever data we have that

we could consider as being reliable.

Threatened waters is another area that we talked about at some length. A threatened water is where the data may show that it isn't yet impaired, but it's well on its way. And well on its way to the extent that if some action isn't taken by the Department, then that water will be impaired. In order to make that conclusion, we have to go through what we call a "trend analysis." And that's a very detailed, very comprehensive analysis, and it's very difficult to show.

But in the EPA's guidance, it does tell us that when waters can be considered as being threatened and reasonably likely to be impaired within a reasonable time, usually meaning within two years, then it should be listed. We made mention of that in the document, and if you'd like to note specifically where, I can probably pull that up. It's on page 233, under item D, where it talks about physical, chemical, biological, and toxicity data. What we added is a statement in this document.

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It says, "In addition, if time trend data indicates that presently unimpaired waters will become impaired prior to the next listing cycle, these threatened waters will be judged to be impaired."

And we put that in there simply to confirm with EPA that, in fact, if the data were to show conclusively through a trend analysis that it will become impaired within that short period of time, that we would, in fact, list it.

CHAIRMAN HERRMANN: Phil, where do you stipulate your bullet number one in that written document?

MR. SCHROEDER: Where do I stipulate bullet -- this bullet number one, No Minimum Sample Size?

In the last methodology document, didn't we have something that restricted the determinations based on a certain sample size? We've removed that reference to the sample size, so by removing that reference, we've made it a non-issue, if you will. In other words, we can't take sample size into account.

CHAIRMAN HERRMANN: I think we all agree with the Commission that we'll still be here sometime down the road and all of you people on the Staff will be here and all of the people out here will still be here, so it's understood (inaudible.)

MR. SCHROEDER: Absolutely. Yeah. Okay.

CHAIRMAN HERRMANN: (Inaudible).

MR. SCHROEDER: We think that running through the statistical analysis will show us where data size is unreliable or insufficient, in order to reach a proper conclusion. But if you'd like to see something placed in there that confirms that sample size has some bearing in some cases, then we can put something in there.

Well, that covers some of the basic issues, and I'm going to come back a little bit later and talk about six issues, but I'm going to follow John and he's going to come

up here and talk more about some of the statistical measures that we take in making decisions.

MR. FORD: Good morning. I'm John Ford, I work in the Monitoring Assessment Unit of the Water Pollution Control Branch. I guess it's a beatable or unbeatable task to talk to you today about statistics, it's a subject that probably no one in this room is really comfortable with; that no one in this room is probably an expert at, but because we are using statistical procedures in this document, I think it's important that the Commission be able to make an informed decision when they do decide about the approval of this document.

So we've decided that we would like to give you some very simple explanation of some of the statistical

methods that are used here. We're going to try to keep it as simple as possible. And I urge you, if you want me to go back and repeat something, or go over it again, or if you have questions, please, don't hesitate to ask.

We've got -- basically we're using one of three procedures, statistical-type procedures, to evaluate our physical and chemical data.

The first is the once -- one exceedance in the three-year rule, the second is the ten-percent rule, and the third is hypothesis testing.

The no more than one exceedance in three years is extremely simple and very easy to understand.

(Whereupon there was an adjustment of the

microphone.)

MR. FORD: Okay. Is that better?

It's extremely simple, the rule states -- the rule is used for aquatic life protection for toxic pollutants such as heavy metals, pesticides and other organic chemicals. And the rule states that if you have zero or one exceedance of these -- of the toxic criterion in a three-year period, then you rate the water as unimpaired. If you have more than one exceedance, you rate it as impaired.

Now, in the past we used that second rule, the ten-percent rule, for those particular chemicals. And the

reason we're not doing it this year --

Is there a second slide we can go to, Rich? Yeah.

The reason we're doing that is because the ten-percent rule, we feel, is -- in certain conditions, is just not protective of aquatic life in streams. That horizontal line is -- represents a three-year span of time, and those circles represent a point in time where you have an exceedance of the toxic criterion. And the dash line following it is the elapsed time period over which that aquatic community is going to suffer because of that event.

Using the one in three year rule, which is above the line, we would allow only one event. And, basically, it's kind of generally been conceded that a toxic event is going to impair a stream and the aquatic life in the stream

for a six to 12-month period. So the rule would allow one of those six to 12-month periods in that three-year span.

However, under certain conditions, the ten-percent rule, in a case, for instance, where you have monthly sampling and over that three-year period, you would have 36 samples, the ten percent rule would allow you to have three of those 36 samples exceed the criterion value, you would still be in compliance with the ten-percent rule, but depending on how those were spaced out in time, you could

impair that stream for the majority of the time.

So clearly that's the situation we want to avoid. And our recommendation is that we go to the once in three-year rule for these particular toxic chemicals.

Okay. Rich, let's go to the next slide.

The second --

COMMISSIONER HARDECKE: What do those (inaudible.)

MR. FORD: Those would be the heavy metals, like lead, zinc, mercury, cadmium, chromium, and toxic organic chemicals such as pesticides, TAHs.

COMMISSIONER HARDECKE: (Inaudible.)

MR. FORD: We would be defining it as a time at where we went out and collected a sample, a water chemistry sample, and that sample showed that the levels were higher than the allowed toxic water quality standard for that chemical.

CHAIRMAN HERRMANN: And these would be all taken

during normal flow events?

MR. FORD: Well, we make no assumptions for this particular rule. In other words, if it's -- if it reaches that concentration value, regardless of the amount of flow in the stream, it's a concentration value, and that's what causes the toxicity.

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COMMISSIONER HARDECKE: (Inaudible.)

MR. FORD: Okay. We can certainly go back to it.

COMMISSIONER HARDECKE: When you referred to an event, I would understand an event to be something happened -- (inaudible).

MR. FORD: Okay. It may be just a bad choice of a word. It would be a sample result.

The second method that we're using is the ten-percent rule. And we are using that for the rest of the criteria that apply to the protection of aquatic life that are nontoxic and that would include things like temperature, pH, dissolved oxygen, total dissolved gases, and we're -- for a separate reason, we're throwing ammonia in that category. We can discuss that if you want later. But these are some of the most common water quality constituents that we measure in streams and lakes and some of these are often found on the 303(d) list.

This also is a fairly simple rule, and I don't think we'll have any problems getting you to understand this.

Basically, all it says is that if more than ten percent of the samples that you take for that water exceeds the standard, then you rate the water as impaired. If it's less than ten percent, then you rate it as unimpaired.

Now, in the past, the way we've interpreted this -- in the past list -- is very simply, literally, as it says there: We calculate the total number of samples that we have, the total number that we're over, and we calculate the percentage exceedance, and we compare that to ten percent. If it's over, it's impaired. If it's under, it's unimpaired.

EPA guidance and also some input we've had from some of our stakeholders have asked us to use a slightly modified approach to that, and that is to use the binomial probability distribution to make -- to help make that decision. The advantage of using this probability distribution is that it let's you put a confidence statement or tells you the level of confidence in the decision you make. If we use the old process and just calculated the percent, we would just have that information. However, using the binomial distribution, it tells us what the actual probability is that we're making the right decision. So that, in itself, is a much more powerful process. We pay for that a little bit. And the way we pay for it is that when we use the binomial probability distribution, the number that we compare, or the number that we used, is generally not exactly ten percent.

So very small sample sizes, if we're using

sample sizes in the range of four or five or six samples, the

number that we're comparing is actually more like 15 to 20 percent. In other words, if 15 to 20 percent of the values exceed the standard, we rate it as impaired; if less than 15 or 20 percent, we rate it as unimpaired.

But as our sample size increases up to 10 or 12 or 15, that numbers drops down to about 12 or 13 percent. And by the time we have a good sample size of 30 or 35 samples, which we do in an awful lot of places, because this is a -- these are a group of constituents that we measure frequently, by that time we're actually back down to something that's very close to ten percent, 10 and a half or 11 percent. So it's something that's been recommended to us, as I said, by EPA and by several stakeholders. We agree, it's probably a good idea, because it does give us some extra confidence and tells us what the confidence level is in the decision we make.

Okay. The third one is the tough one, we saved the toughest one for last. Go ahead, Rich.

COMMISSIONER HARDECKE: (Inaudible question.)

MR. FORD: I don't have that down there. It's the hypothesis testing slide. It's on page 287. The next slide.

COMMISSIONER HARDECKE: (Inaudible question.)

MR. FORD: Oh, okay.

COMMISSIONER HARDECKE: Is that in one place or not?

MR. FORD: Look in Table D1.

MR. GALBRAITH: Which -- since we're going to be referencing the document a lot, whether we're going to reference the mark-up version or the clean version? I would suggest that we use the second version, the quote/unquote clean version.

COMMISSIONER PERRY: I like the other one so we can see what has changed.

MR. GALBRAITH: Yeah.

MR. GALBRAITH: Okay. Okay.

MR. FORD: That would be on page 243 then, that's the one that has the revisions already in it. If you look on page 243, about halfway down in that middle column, the one that says "hypothesis test."

(Inaudible.)

MR. FORD: -- the test we're using is the binomial probability distribution to test the ten percent rule. And that's for 40 or fewer samples and --

COMMISSIONER PERRY: Right here. But that's still saying for the toxics, she used the --

MR. FORD: The toxics we used --

COMMISSIONER PERRY: -- 101, 102 and 103 --

MR. FORD: That's correct.

COMMISSIONER PERRY: -- and conventional --

MR. FORD: Conventional pollutants; PH, temperature, PO, ammonia, we use the ten-percent rule.

COMMISSIONER PERY: I just wondered, you're using the ten-percent rule, but you're backing it up with your binomial probability?

MR. FORD: What the binomial probability does, it tells us the probability that we're actually exceeding ten percent.

COMMISSIONER HARDECKE: And that was for just the small samples?

MR. FORD: Well, what it --

COMMISSIONER HARDECKE: Small number of samples?

MR. FORD: Well, what it actually does is it looks at a distribution where exactly ten percent of the samples exceed a standard. It looks at a data set that were exactly ten percent. And then it looks at your data set you collected, and then it asks the question: What's the probability that this data set that you collected actually came from this population, where ten percent are exceeded? It tells you the probability that you're within that ten percent or you're exceeding that ten percent.

Again, the value of using that is that it gives

you a level of confidence, a stated level of confidence, whether -- in this case, we're asking for a 90 percent confidence.

COMMISSIONER PERRY: So to clarify my understanding of the answer, you start by looking at the

number of samples and see if ten percent has exceeded the criteria and then you do this analysis which is the two parts --

MR. FORD: Right. In other words, you look at the percent exceedance that you have in your sample, and then you go to the probability distribution and you look at this ideal data set that has exactly (inaudible) and you say what's the probability that what I collected actually came from this probability?

It's kind of like the combination, what's the odds that out of this data set were ten percent? I actually drew a set of samples that look like the one I got. If you've gotten ten percent exceedance, that means you're not -- depending on when you sample, you're not always going to get exactly ten percent, the samples show exceedance. Sometimes you're going to get more. Sometimes you're going to get less. So the binomial probability gives you the probability of that happening, the likelihood that your samples came from that number. It is a 90 percent confidence

level that the decision we're making is correct. This gives us a 90 percent probability that we're not overestimating the problem is actually -- we're going to be talking about confidence, this is a lower confidence, so in this case we're trying not to overestimate the problem.

Any more questions before we go onto the third method?

All right. The third one is hypothesis testing. Now, we use this for all of the data except for our aquatic life data. So this would include our standard -- our bacterial standards for recreational waters, drinking water supply standards, wild stock and wildlife watering, fish consumption, all of those things.

(Inaudible.)

MR. FORD: Basically what we're doing here, in the first two procedures, we were actually looking at a frequency where the criterion value was exceeded, for the first one it was: Is it exceeded more than once in three years? For the second one is: Is it exceeded more than ten percent? For the rest of these that are done with hypothesis testing, we're actually calculating a single number and we're comparing that number to the criterion value. That's the big difference. We're actually calculating one number and we're comparing that to the criterion to see if we're over or under

the criterion value.

Let's go ahead to the next one. Did we get a slide out of order? Go to the next slide. That's the one.

Before we start talking about hypothesis testing and confidence limits, a couple of definitions. Population mean in the sample. The population mean is the true mean. It would be the average value that if we sampled a water continuously over the entire two-year period for which we're doing a 303(d) list, and we had all of the data that was there, we captured every piece of data during that two-year

period, that would be what we would compare to the standard, and that would be called a population mean.

Obviously we can't afford to do that, we don't have the resources. So what we take is a small group of samples during that period, and that's called a sample mean, and the sample mean is just an estimate, our best estimate, of what the population mean is. But when we start talking about confidence limits, the important thing to consider is that our sample mean is just an estimate and our population mean may be above that sample mean, it may be below it, we're really not sure where it is, because we haven't sampled all of the time. But the confidence limits give us an idea of kind of what the range of likelihood of where that population mean is.

So if we could go back to the next one.

What are confidence limits? Confidence limits are what we're proposing to use to do our hypothesis test. A confidence limit is a number that is higher or lower than the mean, and it would be the value rather than the mean that we would compare to the criterion value.

Now -- I'm sorry, let's go back just a second.

We've got -- we've shown here a 90 percent upper confidence limit, a 75 percent upper, a 75 percent lower, and a 90 percent lower -- yeah, 90 percent lower. Basically what a 90 percent upper confidence level means is that there is a 90 percent probability that that number -- and if you look at the scale of that pollutant on the left that runs from zero

to 50, it looks like that number for the upper 90 percent confidence level would be maybe around 47 or 48, something like that. It means that there is a 90 percent chance that the population mean or the true mean, the thing that we really want to compare to the standard, is that number or a lower number, it's at that level or lower. So it's helping this bracket and giving us a level of confidence of where that true population mean lies in reference to that number. And conversely, a lower 90 percent confidence level, which in this case may be around seven or eight, that that would be the value at which we're 90 percent confident that the true

population mean would be that number or a greater number. So that's what confidence limits are.

Let's go on now. This is a statistic -- very simple statistic that's used. It involves the sample mean, the standard deviation, and the number of samples and a value you take out of the statistical testing. Next one. That has to do with the assumption of the distribution, but it's a fairly simple equation, it's only got about four values in it.

Okay. Why are we choosing to use confidence limits instead of the mean? Confidence limits can provide us greater confidence that we are not underestimating or overestimating the problem. For instance, if we had a human health criterion, and we wanted to make very sure that we didn't underestimate a problem and rate this water as unimpaired, when, in fact, it was impaired, you might want to

use an upper confidence limit, that would give us much more confidence that we're not underestimating the problem.

Conversely, if we had a problem that we thought was a very minor environmental concern, but which might cause substantial economic and social problems if it went on the 303(d) list, our interest would probably be more in not over -- making sure we don't overestimate the problem, in that case, we would -- it would be preferable to use a lower

confidence limit rather than -- Here is an example of how a confidence limit can be more valuable than using the mean.

Along the left-hand side, there is a particular pollutant that runs -- the values range from zero to up over one milligram per liter, the water quality standard for this pollutant happens to be one -- that that's that little line that's drawn there, of the particular samples we've drawn here. We calculate the sample mean, and it's .48 milligrams per liter.

What we're interested in is finding out whether this data set represents an exceedance of that water quality standard. If we just use the sample mean, basically all we can say is there is a 50 percent chance that the true mean is less than .48 and a 50 percent chance it's above. But for that 50 percent that's above .48 milligrams per liter, we don't know how much of any of that is above the water quality standard, so it doesn't allow us to make a very powerful statement about whether or not we're meeting the standard.

It appears we are because we've got a number that's much less than the standard, but we still don't know.

If we use an upper confidence limit of say 99 percent and calculate that and that happens to be .94 milligrams per liter, then we can say that we are 99 percent sure that the true mean, the population mean, is .94 or less.

That means that the chances that it's above that value or above the water quality standard is less than one percent. That's a much more powerful statement, saying that you are -- we're sure that it's less than a one percent chance above the criterion, as opposed to saying less than 50. So that's the value of using this.

However -- go on to the next one, Rich -- there is a downside to using these big confidence limits and that is by ensuring that we don't underestimate a water quality problem. We are often, particularly with these higher confidence limits, overestimating the problem. So in this example, the sample mean is under the criterion of 1.72, but if we used a 90 percent confidence limit, that value would be .08 and we'd come to a different decision, that would be rated as impaired because that number had .08(inaudible.)

The point I'm trying to make with this slide is, it's not always necessary to have a really high upper confidence limit. It is very important that you don't underestimate a problem and keep something high, but if there are mitigating circumstances, it looks like that the -- if you make a mistake and you get the wrong decision, if there

is some mitigating circumstances to make that less of a problem, then you can tolerate and live with the lower confidence.

As an example, in our methodology, instead of using the 90 percent confidence limits for atrazine and for mercury, we recommended the lowering to the 75 percent, because in the case of atrazine, our decisions about atrazine levels in small water and drinking waterways, mitigated by the fact that that finished water is tested, if there are problems in finished water, there are requirements in the Safe Drinking Water Act for notifying folks and also for getting the problem fixed quickly.

So that's the part that -- a good reason for lowering the confidence limits because the ultimate consequences are greatly reduced because we have this backup procedure for drinking water. For mercury, as an example, where it's also a human health problem and we recommended reducing it to a 75 percent confidence limit, because there is a statewide advisory on mercury. People, if they're aware of that, are aware that there is a potential problem and hopefully they adjust their fishing and fish eating habits consistent with that, so that that problem is reduced. So I guess the point of this slide is that we don't always have to choose a very high upper confidence limit if the consequences that (inaudible) face are not really serious.

So what we're proposing in this methodology --

and we're getting close to the end, I appreciate your

patience -- is that for the human health criteria, we use an upper confidence level, not with a number higher than the mean, so that we're not consistently underestimating the problem. We don't want to underestimate a human health problem. And right now our proposal is to use a 90 percent upper confidence limit for toxics and fish tissue, except mercury, and for bacteria and recreational waters. And a 75 percent upper confidence limit for mercury and fish tissue and toxic water and the toxics in drinking water supply. And then for non-human health beneficial uses, we're recommending using the lower confidence limits to prevent us from overestimating the problem. You can read all of those. But basically they're fairly well balanced.

The last one that's on the very bottom is the 95 percent lower, and that also should be 90 -- in the table in our (inaudible) that's alpha, 1, which is the 90 percent lower confidence, and that's the ten percent (inaudible). I just throw that in there to show you how our ten percent significant levels have balanced out below the mean.

Just one more slide. Ed asked me to throw this in. We've been talking about confidence limits, and he wanted this to provide a little information on -- if you're choosing something other than the sample mean, like an upper confidence limit, how much are you raising that sample mean?

How much higher are you going to compare something in (inaudible). And what I did is, I went into our fish tissue data base for mercury and I pulled out, at random, the first two that I came to that had means above the criterion value, which as you see there, is .3 and that was Mark Twain Lake and the Bourbeuse River. And then I pulled out the first two I came to that had means less, and that happened to be Creve Coeur Lake and Lake of the Ozarks. And these are all fairly small data sets. I think Mark Twain was four and Bourbeuse River was five, Creve Coeur was three and Lake of the Ozarks had nine samples. So the heavy line in the middle is the sample mean, the numbers above are the 60, 70 and 90 percent upper confidence limit.

I guess the main message to take away from this is that we could go as high as a 90 percent confidence limits on any of these small data sets, even though they are small data sets and are more apt to be -- to show expanded or larger confidence limits on two streams that we would grade as impaired, based upon the mean. We would still rate as impaired using the upper confidence limit on the two that we would rate as unimpaired, using the sample mean, we would still rate them as unimpaired in the upper 90 percent. And if you look at those upper 90 percent numbers, they're larger than the means, but they're not a great deal larger. So I

hope that gives you some comfort that in some data sets, this isn't a big deal.

I think others, such as bacteria, which have very much more greatly -- even though we're using along a more normal approach to dealing with those, that spread around them might be (inaudible).

That's all I have for my presentation. If you have any questions right now, I'll be happy to try and answer them. And, of course, I'll be around all the time if you have a question later.

CHAIRMAN HERRMANN: It's not particularly germane to the presentation, but you just opened an old prejudice of mine. You said there was five data sets on the Bourbeuse River, how many locations?

MR. FORD: Oh, I honestly couldn't tell you.

CHAIRMAN HERRMANN: One. At Union. The Bourbeuse River is 134 miles long classified. I don't think that represents --

MR. FORD: It's a very long classified segment.

CHAIRMAN HERRMANN: That's right. I don't think that qualifies for listing the entire 134 miles as being impaired for data sets at Union, which are very, very close to the mouth.

MR. FORD: I'm not sure where these five samples were taken from. I don't know if they're all from one place or from different places on the river.

CHAIRMAN HERRMANN: I'm reasonably certain --

almost certain --

COMMISSIONER PERRY: That's a 99 percent confidence level.

CHAIRMAN HERRMANN: -- anything --

COMMISSIONER HARDECKE: About four years ago you told me they were at the Union access.

MR. FORD: Is that right? Okay.

CHAIRMAN HERRMANN: Any statistical analysis has to be tempered with a bit of reasonable and common sense. I think in some of these cases that reasonable and common sense disappears.

MR. FORD: I think that's a good point. And a lot of the segments that we're used to working with are anywhere from two to three miles, up to ten to 12 miles in length, and maybe when we're --

(End of Tape 1, Side A.)

(Start of Tape 1, Side B.)

MR. FORD: -- just identifying a certain shorter segment within that is the affected area. I don't think there is anything unreasonable about that.

CHAIRMAN HERRMANN: Thank you, John.

MR. FORD: Uh-huh.

MR. SCHROEDER: Just to add a little bit to the Gasconade River -- or Bourbeuse River situation, I think your comment is well taken. And one of the things we could possibly do is, again, when we look at data and its representativeness of a segment of water, we need to think

about what other types of factors might affect that representativeness, such as the case in the Bourbeuse River. If we have only one location where we have the data, we'll look downstream and look at the first point of where significant factors -- other factors may come into play, like a confluence with another major stream or something like that, and stop that segment that's considered as impaired there, everything down below that, if we don't have data, would be suspect, but would possibly be a good candidate for a 3(b) listing, where we'd say more data needs to be collected than the usual, to be certain about what the condition of that water is.

But some of the things I think we could do a better job at is looking at the factors that would affect the reliability of the data and making better conclusions based on what the data may be telling us.

CHAIRMAN HERRMANN: Yeah, but one big difficulty

I have is that -- John just presented -- it's just statistical analysis to prove that a stream is impaired or is not impaired. Nowhere in this document, nor anyplace else do I find a visual assessment making a stream listed as impaired on a visual assessment. We have, in the past, had numbers, and numbers of those kinds of listings, and most times when I get a TMDL or a letter of request of permit change in lieu of a TMDL, it's based on a visual assessment, and I say that is insufficient evidence; that is not sound scientific

assessment data, which is required by the federal law and by our regulations.

MR. SCHROEDER: We have, in our regulations or in the regulations, narrative criteria which says when there is unsightly bottom deposits, putrescent conditions, or discoloration, things like that, which are often recognized through ocular or visual estimates of the water. We had some discussions, I remember some discussions we had some years ago with relation to the 303(d) listing process whereby we wanted to avoid being very subjective there and we wanted to be consistent in the way we analyzed and utilized the narrative criteria for making a listing, and one of the things that we came up with, and the Commission helped us in drafting those regulations, was that before we would use narrative criteria or some visual observation as a means for

listing, we would have to quantify that some way. In other words, a quantification of the narrative criteria. And we've done that in two instances in this document. I can probably find those.

On page 265 of the revised document, we talk about color and objectionable bottom deposits as being quantified. The color is quantified by a measurement through what we call a platinum-cobalt visual method. And it's a methodology that's scientifically used to determine if there is a colored discoloration or significant change in coloration of a stream that's based on some kind of human source or anthropogenic --

CHAIRMAN HERRMANN: As a measurable determination?

MR. SCHROEDER: Yes, absolutely.

CHAIRMAN HERRMANN: Not by my eyes or your eyes --

MR. SCHROEDER: Right.

CHAIRMAN HERRMANN: -- or someone else's eyes, it's a measurable determination?

MR. SCHROEDER: Exactly. So if we --

CHAIRMAN HERRMANN: Most of these listings in the past have not been on that determination, they have been on, quote, bottom deposits, excess algae, a subjective

determination.

MR. SCHROEDER: Right. And that's why we've made some of these changes in this document, to avoid that sort of path in the future.

The only two narrative-type criteria, observations, that would lead to a listing in accordance with this document, as I read it, would be color, based on this platinum-cobalt visual method that quantifies the discoloration. In other words, compares that with what it should be in a normal setting. And objectionable bottom deposits, which says that there is a greater than ten percent of the stream bottom covered by sewage, sludge, trash, or other materials that are of anthropogenic origin. So we would have a measurement there, too, saying that it has

reached a threshold, a quantifiable threshold, to say that it is significantly different than what we would see in a normal setting.

CHAIRMAN HERRMANN: What page again, please.

MR. SCHROEDER: We're on page 265. In the right-hand column, where we talk about compliance with water quality standards.

COMMISSIONER HARDECKE: You made a statement that that -- or something would be different than the normal setting, that normal setting, compared to a normal setting in

that stream or compared -- because it would be hard to compare the Missouri River to the --

MR. SCHROEDER: Like some Ozark stream.

COMMISSIONER HARDECKE: -- to the Bourbeuse. Or it would be impossible to compare the Bourbeuse to the Meramac.

MR. SCHROEDER: Right.

COMMISSIONER HARDECKE: One is going to be notoriously muddier than the other, just because they're different waters.

MR. SCHROEDER: Right. So the comparisons we make are to -- usually what we'd like to do is the upstream. Wherever we see a discoloration, we move upstream of that same water body and see if the discoloration disappears, where we can find a source before the discoloration. The most telling evidence we can find is when we find some kind of a discharge, that right below the discharge in that stream, the discoloration begins, and that would be very

telling, that what we have there is an anthropogenic source that's causing a discoloration of that stream. But you're correct, we don't compare a Missouri river to an Ozark stream when it comes to these types of criteria, that would not be reasonable or suitable.

COMMISSIONER PERRY: By using the upper confidence level for bacteria in recreational waters, and having a broader range of results because of this method, how much more likely is it to be that we will assume a higher limit than is actually (inaudible)?

MR. SCHROEDER: I think what you're telling me is that since we're using the 90 percent upper confidence level for determining compliance with the bacterial standard for recreational streams, that's creating a very stringent task. In other words, we have to be 90 percent certain through this --

COMMISSIONER PERRY: And I think it's being compounded by the fact that there will be such a variation in bacteria results, if I understood what he said.

MR. SCHROEDER: Well, since the bacteria results will be reflected as a geometric means, we're looking over a 30-day period of sample results, taking that mean, and then looking at what the 90 percent confidence level sets for comparison to the standard. In other words, it's a very -- it's a pretty stringent standard. Because of the fact that

there is a human health factor involved here, we want to protect human health, we want to make sure that we capture, in 90 percent of the cases, with confidence, that the waters -- where waters are sufficiently -- have a sufficient bacterial pathogen level to cause human health problems. We

want to make sure we address those to the 90 percent confidence level. In other words, it's going to result in some cases that the pathogen levels are not exceeding a standard, but they're going to be addressed, because we've set such a high confidence level here. There is going to be some cases of that.

Now, if we're uncomfortable with that, our choice would be to reduce the confidence level to 75 percent or something less. But that's something that's very difficult for us to help you with, because we need to understand from you just how confident should we be in protecting public health? We're suggesting something pretty stringent here.

And I can't -- I wish I could tell you under what -- how many circumstances we're going to go out there and take samples and we're going to find it as being impaired based on this statistical method, when, in fact, it really isn't. I wish I could tell you, but I can't.

CHAIRMAN HERRMANN: You're analyzing data at a specific segment or location on a stream, and I'll come back to that same argument that I posed in relation to fish tissue samples on the Bourbeuse River, if you're not taking into

account mixing zones, you're not taking into account ratio flow, other variable factors, and you're taking samples at

one location, you may determine that you're exceeding the limits at that location, but go down the stream some small distance or maybe a significant distance and you have a different set of circumstances.

So again, if you have one or a few sample sites over a small segment and then put the whole stream on as impaired, I think is unjust, inequitable, and dumb.

MR. SCHROEDER: And we agree. And I think there is a way to avoid that. And the way to avoid that is make sure that we look up -- or look downstream, to look at any factors that come into play, whether it's a trib -- major tributary or perhaps even another discharge to the river, something that would change the conditions that would render the data that's upstream unreliable for determining conditions below that point. And we would work on defining that impaired segment only down to that -- where that significant factor exists. That's what we would present to the Commission, saying, this is where we're certain, based on our analysis, that this water is impaired. It's only this segment.

Now, we would also come to you and say, now below that point there is some chance it's also impaired, but our data can't be used because it's unreliable for making that judgment. And what we would ask in that case is that we

prioritize monitoring to find out what's going on further downstream. Either that or we'd have to say, We need to address this problem within a reasonable time, within the next two years, so when the next listing cycle comes up, we don't have to worry about that problem anymore. TMDL is done, the issue with the bacterial levels upstream have been addressed, then we don't have to worry about the downstream segment.

But that would have to come about in a very quick process, within two years or so, or within the cycle of a permit if it's a point source that's causing the problem. There are ways to address that. And we understand and agree with that point wholeheartedly and hope that any time we present something to the Commission, in terms of defining the segment that's impaired, we can defend why we're saying it's that segment; not any more, or not any less.

I'd like to go back, if there is not any more questions at this point, and just kind of recap six points, that starts on page 279 of your packet. And then following this recap, I think it would be important to start hearing from some of the audience, if they have some questions for the Commission.

CHAIRMAN HERRMANN: I guess to have discussion, we need a motion to consider this and then we can go into

discussion.

If we have a motion to go into discussion, then we can take -- if we have discussion items or changes that we want to approve or disapprove as we go along, we can do those individually.

Do we have a motion to (inaudible)?

First we have to have a motion.

So the Chair would entertain a motion to consider or approve the methodology document as presented so that we can have discussions.

COMMISSIONER KELLY: I move that we approve the document as presented.

CHAIRMAN HERRMANN: Is there a second?

COMMISSIONER HARDECKE: Second.

CHAIRMAN HERRMANN: Moved and seconded. Any discussion?

Okay. So we can now, I guess, legally have discussion of the items. And have you completed, Phil?

MR. SCHROEDER: Well, if you want me to be completed, I'll be completed.

(Laughter.)

MR. SCHROEDER: I was just going to recap six issues that we've already talked at some length about them.

CHAIRMAN HERRMANN: Okay. Okay.

MR. SCHROEDER: I think it's not that critical to go back through.

MR. GALBRAITH: What you're -- you might want to help guide Phil here, what you're trying to say, Chairman, is, as we take each of these issues, let's deal with each issue in its turn, so we don't have a whole bunch of discussion, and then come back and try to remember what we discussed, you know, two hours from now. So each issue, we might entertain a motion on each issue, if there is an amendment after we've heard from Phil and from commentors --

CHAIRMAN HERRMANN: Yes.

MR. GALBRAITH: -- both.

CHAIRMAN HERRMANN: Yes.

MR. GALBRAITH: Okay.

MR. SCHROEDER: All right. Well, the first issue is probably one we've talked probably the least about, and that is whether or not we should, in our process of compiling this next list, develop an entirely new list, without any regard to what's already on the current list, or develop a list which is more like a modified list. In other words, modify it based on some of the new information we've gathered. Now, the directive from the Commission, as we understand it, is to take this methodology and compile an entirely new list with it -- using it.

Start over. In other words, go start fresh. Now, the one thing that we would state about that is that, in essence, you're going to do the same thing, either choice you make. If you go with this methodology as is proposed, we're

going to assess all data. We're going to make a decision, affirmative decision, on all waters and we're going to come to the Clean Water Commission on just those waters we think meet the qualifications of being listed under this new methodology. And where there is a case where there is a 2002 listing and the data is insufficient to tell us one way or another with any affirmative feeling as to whether it's impaired or not, we're going to alert the Commission to that fact and let them know that it's on the 2002 list.

We have no way of knowing whether or not it's impaired or not, and the likelihood that if we don't put that on the list is going to be high, that the EPA will put it back on the list, so -- but we'll discuss that with the Commission when that time comes. But our proposal to you, our recommendation is, as you've directed, we're going to take this new methodology and we're going to reinvent the entire list, based on the new methodology.

CHAIRMAN HERRMANN: That brings up the question as, what does EPA say about inventing a new list as opposed to modifying the list? John? Where is John hiding, behind

the post?

MR. DELASHMIT: It works both ways, Mr. Chairman.

CHAIRMAN HERRMANN: Yeah.

MR. DELASHMIT: You know what, I think maybe that -- just to clear it up a little bit, would be to kind of tell you how we look at your list once it's -- and my name is

John Delashmit, I'm with the EPA, and I'm Chief of the Water Quality Management Branch. But the way we review a State's list -- and fortunately I've seen it happen a couple of times in the two years that I've been in the water division -- is we look at the 2002 list and we look at the difference in the list that you submit between the two. For example, if -- and I don't know how many waters were on your 2002 list, but if there were 200 waters on the 2002 list, and there are 100 waters on the new list that you submit, we would look at the 100 waters that were removed and see if they were removed with good cause. That's what we look for, is: Was there a compelling reason and is there sufficient data to support removal of those waters from the list? So in essence, our review typically uses your old list and compares it to the new list. Or is there -- for example, if there had been no data given on the water body in the interim period, and the water had been listed as impaired in 2002 and it was removed

from the list despite the fact that there was no data to support the removal from the list, we would question: What did you use to make that determination? And key in all of this, of course, is when you submit the list and -- is to submit your supporting justification to let us know why you made your decision.

I think it's very important that we hear from the state, specifically on how you made those decisions, because if you supply us with that information and your

rationale, there is a greater chance that we will soon go away, as opposed to us making assumptions and trying to figure it out for ourselves.

I think if we did put one back on that was delisted, our justification or our rationale for doing that, and, of course, after we -- if we did anything like that, we would also take public comment and we'd have to explain in great detail why we did it, but hypothetically, if we looked at it and said we did not believe that you had good cause to remove this from the list, that would be our justification, and we would say why we felt we didn't believe you had good cause.

(Inaudible)

MR. DELASHMIT: Typically no. I think -- well, what we can see happen and what I've seen happen in a couple

of the other states is, we are tasked with reviewing your list against the applicable regulations and the statute, and it directs us to use all relevant and available data. So sometimes what has happened in some of our other regional states, is states have excluded data for various reasons and we might not feel that that's appropriate, so that could happen. It could happen that we are making our decision based on different data, if we felt that certain data was excluded, without valid justification.

COMMISSIONER HARDECKE: (Inaudible question.)

MR. DELASHMIT: No, we have -- we -- well, EPA does sampling of fish tissue. I hope our sample wasn't in

the Bourbeuse River, considering that that's a sore spot, but we do have -- there are -- we solicit data and we ask that the state solicit data from other neighboring states and other entities, and I know you have volunteer programs and other things, so we look at all of that, and sometimes the Agency and the states disagree on what was appropriate data to be used.

CHAIRMAN HERRMANN: Most of us that were around in 2002 when the 2002 list was promulgated, there were at least 26 streams that were added by direction of EPA for no good reason, for no apparent reason, with no justification. And if we deleted those, we would have to say that they were

put on there in the first place with no prior justification.

MR. DELASHMIT: And we would have to answer to that as to -- you know, if we deleted -- or if we added water bodies back with no valid reason. I think, hopefully, we won't be doing that again this time. If we added waters back -- we may disagree on the reason, but I think we will supply you with a reason as to why we added the water bodies back, that's our task.

COMMISSIONER PERRY: It seems to me that's the only place -- if this methodology works, there shouldn't be any problem. This methodology should put on it every impaired water that belongs there, but what we know is, our history from 2002, is that you combine some waters that I think we would have thought were more with the 305(b) list

and put them -- and we've been finding -- trying to get those off ever since. And then we're going to keep -- you know, this just shows that -- how bad it is to get something on the list that doesn't belong; it seems like it just kind of carries with us for years and years and --

MR. DELASHMIT: I've heard that characterization.

COMMISSIONER PERRY: -- we keep having this problem. And that would probably be the only thing that we'd be disputing over what is -- whether we have a new list or a

modified list -- would go back to those that we feel should have never been there in the first place.

MR. DELASHMIT: My life is much easier if we agree on a list that you submit. Believe me. Much easier. So ideally, you would submit a list that we could approve without any modification whatsoever. But sometimes we disagree. Hopefully we won't this time.

CHAIRMAN HERRMANN: The basic answer, then, would be that, to Phil, we should start with the 2002 list and revise it as necessary, providing justification for those waters that should come off, those waters that should be added, and develop the new list from the 2002 list, is that --

MR. DELASHMIT: That would be closer to the way we review the list.

CHAIRMAN HERRMANN: Okay.

COMMISSIONER HARDECKE: And I would just ask

that, it seems to me like the goal here is to list the waters that are impaired here, and I would expect the EPA to have the same scientific testing done that we're asking (inaudible).

MR. DELASHMIT: But we disagree -- we sometimes disagree on things, statistical significance, other things. Was this data appropriate to be used? And hopefully that

won't happen, but that can happen, and I just wanted to alert you to the fact that it could. I hope it doesn't, but it can.

COMMISSIONER PERRY: And then the --

COMMISSIONER HARDECKE: I was just asking for that -- (inaudible).

MR. DELASHMIT: Ideally, what will happen is any water that is impaired gets listed, and waters that aren't impaired don't get listed, that's our goal.

CHAIRMAN HERRMANN: Thank you, John.

MR. SCHROEDER: If you'd allow me, I'd like to just kind of play out a scenario with you as to how all of this really works or may work. Hopefully, it will help you understand what we may be in for.

Let's use the Bourbeuse River as an example. We had that listed for the entire classified segment, but all we have is the data of certain segments. What we will likely do when this next round of listings, come back to the Commission, if the data still shows impairment in that one

segment, and we'd take it down to that next -- what I was talking about -- next significant factor may be affecting the reliability of the data, and only come back to the Commission with the shorter segment of the Bourbeuse. What's going to happen to the rest that was on the 2002 list? And if we

don't have data to say one way or another that it's impaired or it's unimpaired, what will EPA do with that?

Now, our recommendation to the Commission would be, Well, we need to have some more data, we need to prioritize that for further monitoring, put it on the 305(b) report under category 3(d) as one that needs further study.

Now, I'm wondering what EPA is going to do in response to that. Are they going to say, Well, it's on the 2002 list and, therefore, there is a rebuttable presumption that it's impaired and then it must be rebutted before we can take it off? Because we don't have the data to rebut it.

CHAIRMAN HERRMANN: I think the difference is that it would still be listed for a small segment, but 134 miles won't be listed as impaired for mercury, and 134 miles won't be listed as whole body contact because there is no water in Maries and Phelps County in the Gasconade River.

MR. SCHROEDER: I was just hoping that you might direct that question back to EPA, as to what would happen to the lower segment of the Bourbeuse River if you didn't have the data or the upper set or whatever the case is --

(Inaudible.)

MR. SCHROEDER: What would we do with the

segment that's on the 2002 list, which we decide through this new methodology doesn't have sufficient data to indicate that

it's impaired or not, that would need further data?

CHAIRMAN HERRMANN: Put it on the 305(b) list.

MR. SCHROEDER: That's the question that's before us. I mean, are we comfortable with where we are with that? And do we understand enough about what EPA is going to do with that half?

COMMISSIONER PERRY: We keep -- it's almost like a burden of proof question. Is -- who needs to prove that something that shouldn't be on there, shouldn't be on there? Whether it's EPA put it on and now we're dealing with trying to -- having the burden to show that it doesn't belong there, when we never suggested that it be there in the first place. And how can we form a partnership here where we come up with a proper list? Because that should be both of our goals.

(Inaudible.) (Laughter.)

MR. DELASHMIT: I'm a petroleum engineer, so you can imagine how knowledgeable I am about the biological communities, but it is reviewed by people on my staff, it's reviewed also by Ph.D. biologists in our environmental services division. We consult with headquarters on the list, so there are a lot of very knowledgeable folks that look at the list from our perspective, so it's really a team approach. But it is led

by someone on my staff, so we have many, many to answer to.

(Inaudible.)

CHAIRMAN HERRMANN: I haven't counted if Phil may be - you'd have to pose that to EPA.

MR. DELASHMIT: Are you talking about the number of segments that we added back in 2002? I'm not really sure, I would have to go with -- I think Chairman Herrmann said there were 20 some.

CHAIRMAN HERRMANN: Twenty-six, and 14 of them we've successfully argued and gotten those thrown off.

MR. DELASHMIT: So you're down to a dozen.

MR. GALBRAITH: I wouldn't necessarily limit it to those. There could be waters that met our methodology in 2002 that are still on that list, but won't meet the new methodology. I'm just saying that's a potential. So it could be more than just be add-backs from EPA.

(Inaudible.)

COMMISSIONER KELLY: I can understand leaving off the ones that we did not put on ourselves, but I can't imagine just leaving off the ones that, as you say, you know, were there, that we did put on and have not been cleared. I think those have to go on the list if we don't have a good

reason.

(Inaudible.)

COMMISSIONER KELLY: Well -- and what happens to those?

COMMISSIONER HARDECKE: Well, those would -- the way I understand this, either way, whether you make a new list or revise the old list, they have to meet this new methodology or they're not on the list.

COMMISSIONER KELLY: But then --

MR. GALBRAITH: That's the question.

COMMISSIONER HARDECKE: We're wanting a scientifically defensible list.

COMMISSIONER KELLY: Well, to be defensible to remove the original listings from 2002, I think then you have to go back and make sure -- I don't know how many of those there are, but to make sure that those get assessed with the new methodology.

COMMISSIONER HARDECKE: Well, they would get assessed with the new methodology.

COMMISSIONER KELLY: Well, okay, but I mean, don't just put them --

COMMISSIONER HARDECKE: Either way, they'll get assessed.

COMMISSIONER KELLY: Don't just automatically

put them on a 3(b) -- category 3(b).

COMMISSIONER HARDECKE: No. They, as well as any

other classified water, will be assessed according to the new methodology.

CHAIRMAN HERRMANN: I think if Staff provides us with the information that Phil has said -- Phil and Ed have told us they're going to provide in the new list, if they delete streams, they'll tell us why. If they add streams, they'll tell us why, and it's up to us to assess, and EPA to agree at that time. But, yeah, okay, we can either delete them or we should add them on or put them on the 305(b) list, because there is a question. It has to be assessed when we get a list; right?

MR. GALBRAITH: And we would account -- we would account for every one of those streams --

CHAIRMAN HERRMANN: Yes.

MR. GALBRAITH: -- whether they were there or not.

CHAIRMAN HERRMANN: But you're a petroleum engineer, John, there are a few of us in this room who would have to get your pedigree to assess your --

MR. DELASHMIT: I went to a fine institution. I understand you were at the class of 1950 at the Missouri School of Mines.

CHAIRMAN HERRMANN: That's correct.

MR. DELASHMIT: I went to the same place.

COMMISSIONER PERRY: Which explains the question. Was this one of those cases where you knew the answer before you asked the question?

CHAIRMAN HERRMANN: No.

MR. DELASHMIT: And to perhaps give you a little confidence, Robert Morrison and I graduated together.

CHAIRMAN HERRMANN: Oh, oh, okay. That was a little after 1950. A little after 1950.

MR. DELASHMIT: A little bit.

COMMISSIONER PERRY: Well, I guess ultimately what we've said, and maybe I should make that into a motion. It sounds like we need to review the old list and explain why some are on or off, using the new methodology to give everyone complete information. And so I propose that be the motion under this first issue, to amend the motion that is on the floor.

COMMISSIONER HARDECKE: I'll second.

CHAIRMAN HERRMANN: Your motion is --

COMMISSIONER PERRY: My motion is that we review the entire former list, in terms of the new methodology, but that all that was on the 2002 list be evaluated, in terms of the new listing methodology document

so that both EPA and everyone on this Commission understands whether they belong or does not belong any further.

CHAIRMAN HERRMANN: Is that acceptable to the EPA, John, as far as you know?

MR. DELASHMIT: Well, we will certainly consider your methodology when we go through, but you probably read our comments and there are some things that we have issues with, but we review the list based on the regs and we

consider our guidance, we consider your methodology. There is a variety of things that we have to consider and so -- but I can certainly understand you wanting to construct your list, based upon your proven methodology, but we might potentially disagree. I don't want to say that up front, but it is possible.

COMMISSIONER PERRY: Hopefully, we will continue to have these conversations all along.

MR. DELASHMIT: Believe me, Phil and I will be talking very regularly.

CHAIRMAN HERRMANN: Okay. We have a motion and a second?

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

COMMISSIONER PERRY: Oh, I'm sorry, I didn't -- I didn't realize that they thought we -- okay. Can we

just table that? I'm sorry, I didn't realize we were -- this was something I thought was just sort of --

MR. GALBRAITH: I thought we would vote on issues and hear from commentors each time --

COMMISSIONER PERRY: Absolutely. I didn't realize when I made the comment that there would be more discussion.

MR. GALBRAITH: You wanted -- your motion, you want your -- you're not tabling your motion?

COMMISSIONER PERRY: Oh, you're right, I guess

I want public comment on my motion, don't I?

(Inaudible.) (Laughter.)

COMMISSIONER PERRY: I'm sorry. Is the public going to speak issue by issue as we go through these?

CHAIRMAN HERRMANN: No, most of them have their comments and then we will address (inaudible.) Everyone in here may have something to say and we'll hear what they have to say and then --

COMMISSIONER PERRY: Okay. But then they're going to speak on this particular amendment?

(Inaudible.)

CHAIRMAN HERRMANN: My understanding is that they're going to, among themselves, divide up specific topics so that they don't speak to or reiterate the same subject, so

that --

UNIDENTIFIED SPEAKER: Well, I don't know how that all (inaudible.)

CHAIRMAN HERRMANN: Okay. So we'll hold your motion in abeyance --

COMMISSIONER PERRY: Well, actually -- and it's comments I would hope would be on my motion, otherwise we're going to get confused and that goes against what we said we were going to do in the first place.

CHAIRMAN HERRMANN: Since you've already been recognized by counsel, Mr. Brundage, you may be first.

MR. BRUNDAGE: Thank you, Mr. Chairman, for recognizing me. In an effort to try to streamline today's

process --

CHAIRMAN HERRMANN: Excuse me, for the record, would you restate your name?

MR. BRUNDAGE: Robert Brundage, I'm with the law firm Newman, Connolly, and Ruth, here in Jefferson City.

There are six of us who have tried to coordinate our comments here today, and I want to list those people and the organizations that they're representing here today.

On several of the topics, we have divided up which topics, and we have all agreed upon a unified position. And to reduce the amount of time today, each one of us will

speak on individual topics. However, Commissioner Perry has made a motion that we would like to speak on first.

The people that are part of this group -- the people who are part of this group are myself; John Lodderhose with MSD; Trent Stober, MEC Water Resources; Roger Walker, Reg Form; Mary West, Missouri Public Utility Alliance; and Caitlin Peel with the Home Builders Association of St. Louis and Eastern Missouri.

We're prepared to speak on the topics, I suppose, as they are brought up, but I'll speak right now to Commissioner Perry's motion. We support that motion that the Commission and the Department Staff look at the 2002 list and apply the new methodology in preparing the upcoming 303(d) list. We think that's the appropriate way to go. I don't think we need to say anything else about that.

(Inaudible.)

Mr. Chairman, and Mr. Bryan, do you -- if I could get a vote on that motion now or -- because the next item I saw on what Schroeder had, was like data age and other issues, but I -- (inaudible.)

MR. BRYAN: Before we vote on it, we want to ask if there are other people who have comments on the 303(d) listing methodology document revisions that would like to speak now.

MR. BRUNDAGE: I just want to make sure --

MR. BRYAN: On the issue as -- on the entire proposal as a whole. We've got Miss Holloway and that's -- if you have general comments on this that doesn't touch on these six issues, I think we probably want to go ahead and get those comments on the record before then, so, Mr. Chairman, if you want to --

CHAIRMAN HERRMANN: We do have a request from Doyle Brown from MDC to address the Commission.

MR. BROWN: My comments are going to be general. Again, I'm Doyle Brown, I'm a policy coordinator with Missouri Department of Conservation. Karen Bataille and Mike McKee were on the working group for this particular item, and my statement, again, in general, is that Missouri Department of Conservation is in support of these -- this proposed methodology, that we feel that it provides protection for both human and aquatic life. And so that's our reaction to the proposed thing. Thank you.

MR. BRYAN: Miss Holloway also wanted to speak, Mr. Chairman.

MS. HOLLOWAY: Mr. Chairman, members of the committee, Leslie Holloway, representing Missouri Farm Bureau. I'm a little bit uncertain as to exactly what to address at this point. I do have some comments on the

specific six issues, but with regard to the specific motion, I would say that we would also support that motion and refer again to the Department's comments and the responses to stakeholder comments, saying that the draft L & D provides the basis for creating an entirely new list that satisfies the requirements of the EPA guidance, so it would seem appropriate and it may just be a matter of semantics as to whether or not that's considered a quote/unquote new list, but if you're going to be reviewing all of the water bodies that are currently listed under the criteria of the new methodology, then that would seem to be appropriate. And I'd be happy to comment on anything else at this time or do that later, whatever you prefer.

CHAIRMAN HERRMANN: You have comments on these six specific items?

MS. HOLLOWAY: Yes.

CHAIRMAN HERRMANN: Fine. We'll get to you at that time.

MS. HOLLOWAY: Okay. Thank you.

MR. BRYAN: Anyone else? Okay. Now,

that since the -- we've had an opportunity for the public to comment generally on the proposed listing methodology revisions, I think it's appropriate to go ahead and turn to the amendment that's been proposed and then take each of

these issues in turn.

Okay. Do we have that to be accepted as a friendly amendment by the sponsor of the original motion --

COMMISSIONER PERRY: Can I restate my prior motion, which was to **apply in terms -- you know, whatever we end up with as the new listing methodology, but what we agree to be the listing methodology document today, that that document be used to apply to all waters being considered, but that we also go back and review those waters that were on the 2002 list in those terms.**

CHAIRMAN HERRMANN: That's just you restating for the benefit of discussion, that's -- what the motion --

MR. BRYAN: Restatement of that motion.

CHAIRMAN HERRMANN: That you agreed to, Ron, as the second? Okay.

MR. BRYAN: And that can be accepted by the sponsor, Commissioner Kelly, as a friendly amendment to her motion or to the Commission to vote on it.

COMMISSIONER KELLY: We need to accept that? All right.

COMMISSIONER HARDECKE: Motion has been amended.

CHAIRMAN HERRMANN: Okay. Will you call for the

vote, please -- yeah.

COMMISSIONER PERRY: Yes --

COMMISSIONER KELLY: Yes.

COMMISSIONER HARDECKE: yes.

CHAIRMAN HERRMANN: Yes.

Okay. Motion passed.

Now, we'll go to the specific comments.

Robert Brundage, please.

MR. BRUNDAGE: Mr. Chairman, members of the Commission, it just so happens that item number two was the one item that I was personally going to cover on behalf of the kind of coalition of organizations that are presenting comments here today. I do want, before I address data age and eligibility, I do want to say that the presentations made today, there is several issues that are not part of this six that will be discussed. Mary West will talk about voluntary watershed's plans and suggested changes to --

(End of Tape 1, Side B.)

(Start of Tape 2, Side A.)

MR. BRUNDAGE: -- data age, which I will address, a discussion of the ten percent rule which John Lodderhose and MSD will discuss. Trent Stober will discuss the statistical analysis and null hypothesis. And Roger Walker will also discuss threatened waters. Which is part of the six issues here today.

Let me start with data age. And I'd like to hand out (inaudible.)

You may recall under our current listing methodology document, the Department will generally not look at data that is over seven years old, but if the Department does look at data that is over seven years old, it will provide -- quote, provide a written justification for the use of such data.

During some of the stakeholder meetings, there seemed to be some confusion on whether or not the Department of Natural Resources would be totally prohibited from looking at data greater than seven years old. And I don't think that's the intent of the current listing methodology language or the position of the groups that are here today.

What I have handed out is copied out of the proposed document and, unfortunately, I didn't do a complete job of redlining some of these things, but I want to go through these sentence by sentence.

COMMISSIONER PERRY: And that's page 232 in the clean one?

COMMISSIONER HARDECKE: Page 262 in the clean one.

COMMISSIONER PERRY: Or page 231 and 232?

MR. BRUNDAGE: We're talking about page 231 and

-- at the bottom of page 231 and page 232 of your green booklets there.

The sentence in red that has a strike-through is a sentence that the Department of Natural Resources is proposing to add. The sentence after that, that I have marked in the left-hand column "reinstated," that is in just normal black text and it starts with "If the Department uses data." That sentence there has been reinstated, if you will. The Department proposed to delete that statement. I am basically proposing we go back to the language the way it was, and let me explain why.

When the listing methodology was approved before, there was general agreement that seven years would be a kind of a cut-off period, data older than seven years old would have kind of a presumption that it may not be that reliable, but the Department of Natural Resources would not be prevented from looking at data greater than seven years old. Hence the sentence right after the strike-through red in that first foot note, it says "If the Department uses data to make the 303(d) listing decision," so the Department can use data that's older than seven years old. We think that this language, the way it was, is acceptable language and should not be changed. The Department, if they feel strongly about looking at historical data and feel that it is still

somehow representative of current stream conditions, the Department has every right to bring a list to the Clean Water Commission, but the language that I propose to reinstate,

they will provide a written justification.

What the Department had proposed, which is more in line with EPA guidance, it kind of says data of any age will be considered, and we simply don't think that's appropriate. We wanted to make sure that there was some presumption, and given that the newer data is more representative of stream conditions, and we felt that the existing language is appropriate in that regard.

There is a blue sentence there in the middle that I have written in the right-hand margin "delete," that is a sentence that the Department has proposed to add. It talks about when the entire data base being used is older than seven years of age, a written justification for that use of such data will be provided. I suggested that be deleted because that is already allowed and required because of any data over seven years is old -- seven years old, the Department must provide a written justification. So it's kind of duplicative and not necessary. So we suggest that that be deleted.

Right above that, there is a sentence that I have written in the right-hand margin, "optional." It is

tied in -- Well, let me read the sentence first. It says "A second consideration is the age of the data relative to significant events that may have an affect on water quality." The reason I suggest that's optional is because that sentence and that thought is basically covered by the beginning of the second paragraph that start with "Data collected prior to the

initiation, closure, or significant change in a waste water discharge or prior to a large spill." I think that's the same thought, so it probably doesn't matter whether that sentence remains or, again, is kind of duplicative of the thought in the second paragraph. So it would be okay to leave that in, or, I believe the Department had proposed to delete that sentence in their proposed methodology.

That concludes my remarks. Maybe I have not made myself totally clear and will be willing to provide any answers to your questions, should you have any.

CHAIRMAN HERRMANN: Anyone else who has a comment relative to Mr. Brundage's proposal on data age?

Phil, did you have a comment?

MR. SCHROEDER: I think Staff agree in concept with what Mr. Brundage has proposed. The only thing that causes some concern is that when we drafted the language proposed to you, we tried to reflect the full and complete intent of the federal guidance, that all data sources be

considered. When we say "considered" it means that it's looked at in terms of whether or not it's reliable data and whether or not it has something to tell about the condition of the water. And if we quickly determined, that because of age or because of some significant event, that the data is not reliable data to use, we would discount it. We would put it aside and not use that to make our decisions. So in the end, I think we all get to the same place, but we need to be

cautious that the message that we're writing in this guidance, and the result of the guidance, is that we consider all data. We considered age, we consider data size, everything in the process by which of evaluating the data, but that we use all data that is reliable and that is scientifically defensible in making our decisions.

I think Mr. Brundage would agree with that, I hope that he would. I think we're down to pretty much to semantics here in about how we want to phrase that. So I don't know that we have any strong objections, other than we do have a concern that it does kind of tend to move away with -- from what the Federal guidance says, in terms of looking at all data and considering all data.

COMMISSIONER HARDECKE: In what scenario would you use the seven year old data? Because, I mean, it wouldn't reflect current conditions. I mean, that's almost a

given.

MR. SCHROEDER: Well, almost. I mean, that's the point, is we have to make a decision whether or not data of any age is reliable data or not. Now, obviously the older the data gets, the less reliable it becomes. But we have to look at the very specific instances that makes that data unreliable, not just age, but the fact that significant events occur over time. And the longer the time it occurs, the more chance of significant events occurring, so what we're looking for are the significant events. We're not looking for seven years or eight years or five, we're looking

at since that data was collected, has there anything happened -- has there anything that has occurred within that stream that -- or about the data that would make it unreliable. That's the key. Not the age of it, but what has happened since then. And we all agree that the older the data gets, the more chances it's going to become unreliable but --

COMMISSIONER HARDECKE: But is the listing not to list waters that are impaired in '06?

MR. SCHROEDER: Yes, that are currently --

COMMISSIONER HARDECKE: Currently impaired?

MR. SCHROEDER: Yes.

COMMISSIONER HARDECKE: So your old data would be used for reference?

MR. SCHROEDER: Well, if we have older data, but we all -- can also look at that data and the conditions in the stream and the water shed and everything -- all of the other factors that are relevant, and be reasonably certain that nothing has changed, then why not use the data to make the conclusion that that water is still impaired.

CHAIRMAN HERRMANN: Well, I think the out is that it's included, that the Department will provide written justification for use of such data.

COMMISSIONER PERRY: Well, now, and that's where he's -- Robert is suggesting that we reinstate. And the reason I like that over the sentence above it is it

doesn't say who has to demonstrate that it's not representative of the current situation. And by reinstating that which we had before, it makes it very clear that the Department, when they're using this data, will also justify why.

MR. SCHROEDER: I think that's -- as long as we can all agree that if we use data where it could be suspect, we need to fully evaluate the reliability of that data and explain to the Commission why we think it's still reliable. We're certainly in agreement with that. We just don't want to give EPA or anybody else the message that we're just going to categorically exclude something because of its age.

CHAIRMAN HERRMANN: Any other comments on this proposal? We need a motion on this.

Does anyone move -- the chair would entertain a motion to move Mr. Brundage's revision to paragraph number 1 on page 231 and ending on 232.

COMMISSIONER PERRY: I'll make the motion that we follow the recommendation of Mr. Brundage with -- by deleting that second sentence, by reinstating the third and fourth sentence, and deleting that sentence that says "When the entire data base being used is older than seven years, a written justification shall be provided."

CHAIRMAN HERRMANN: "As presented."

COMMISSIONER PERRY: That's the way he presented it, including that part where he marked it "optional," I am proposing that stay.

CHAIRMAN HERRMANN: Moved.

COMMISSIONER HARDECKE: Second.

CHAIRMAN HERRMANN: Moved and seconded.

Please, call for the vote.

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

COMMISSIONER KELLY: Yes.

CHAIRMAN HERRMANN: Yes.

Thank you. Motion passes.

And now we'll go to the second commenter, John Lodderhose, Metropolitan St. Louis Sewer District.

If you could announce your year of graduation from Missouri School of Mines. Oh, you graduated from Missouri University at Rolla.

MR. LODDERHOSE: At Rolla, yes, in '79, and again in 1992. I was there twice.

For the record, I am John Lodderhose, the Assistant Director of Engineering for the Metropolitan St. Louis Sewer District. And I'm going to talk about that item number 3 which has commonly been referred to as the ten-percent rule.

And as John Ford explained, they're actually eliminating that for toxics for protection of aquatic life and they're going to --

CHAIRMAN HERRMANN: What's the page reference?

MR. LODDERHOSE: On the six items, it's 280.

MR. GALBRAITH: Summarized in the packet on page 280. Does anybody -- Phil or John, can you say where it is in the document itself?

MR. LODDERHOSE: In the marked-up copy, it was 235.

CHAIRMAN HERRMANN: Thank you.

MR. LODDERHOSE: And what has occurred is for

the chronic toxicity, they've actually gone from allowing a ten-percent exceedance to only one exceedance, or more than one, I guess, in a three-year period, which is -- could be much more restrictive and sometimes I guess the ten percent could be conceived at not being protective. I think John made a good point there. My big concern is that that one chronic event might not be representative of what actually is going on in the water body, and I'd like to try to explain that.

Most of the stream samples that are collected today are a single-grab sample collected on a single day. And that might not be representative of a -- the four-day chronic toxicity period which is required for a toxic effect. So -- and what we commonly see, and we've seen this in St. Louis, is during a storm event and especially with smaller water sheds, is that you will have an increase in pollutant sediments and even metals in some occasions, but that's a very short-term, episodic event where as soon as hydrographic goes back down, the concentrations go back down, and the duration was such that it was less than four days, so there

was really no chronic toxic effect to the aquatic iota.

So what all I would suggest here is that to apply a foot note to the protection of aquatic life for toxics and just say in there, in the cases where you do have

a short-term hydrologic event from a storm water event, that you exclude that for consideration of a toxic -- chronic toxic event.

And John and I have kind of come to some agreement on the wording, and I think he's comfortable with how that could be worded and still assess the water body.

CHAIRMAN HERRMANN: Comments to John?

MR. FORD: Yes. As John mentioned, this has been a subject of discussion between us and stakeholders recently, and we have come to some wording that would clarify that. But we're in agreement with his -- we'll write it -- we've got the wording of the foot note pretty well agreed between us.

MR. GALBRAITH: Do you have some language that you could read or --

COMMISSIONER PERRY: That we could put in as an amendment?

MR. FORD: Yeah, I think I've got it right here.

MR. LODDERHOSE: Okay. The foot note would be added under "Protection of Aquatic Life For Toxics." And it would read "The test results must be representative of water

quality for the entire time period for which acute or chronic criteria apply. The Department will review all appropriate

data, including hydrographic data to ensure that only representative data is used. Except on large rivers where storm flows persist at relatively long periods of time, single-grab samples collected during a storm flow event will not be used for assessing the chronic toxicity criteria."

If that's being recorded, you should have it.

COMMISSIONER PERRY: Yeah, I'm ready to make that into a motion except do we have to wait to see if there is other people who want to speak.

CHAIRMAN HERRMANN: Well, make the motion and then we'll have discussion.

COMMISSIONER PERRY: Okay. I move that we accept the amendment as read into the record by John Lodderhose.

COMMISSIONER KELLY: Second the motion.

CHAIRMAN HERRMANN: Moved and seconded. I think a perfect example of what you're saying, John, was recently there was a proposed 303(d) list put together on which most of the creeks, or all of the creeks interior of the Metropolitan St. Louis area, were included for excess chlorides. When we looked into the record, that was USGS testing done on the 18th and 19th of January of 2000. When you looked at the weather bureau records, we had a big snowstorm immediately prior to that, so it was obvious that

the streets were treated to enhance the snow melt, and that got in the creeks and they took the data samples on those specific days. You take the other 363 days of the year and you wouldn't find chlorides.

MR. LODDERHOSE: That's an excellent point. And we actually take bias sample of storm water events for our Storm Water Phase II program. We want to know what the quality is. And what we have found is it's very short in duration, you know, as long as you're under that acute toxicity, you're in pretty good shape. So that's a real good point.

CHAIRMAN HERRMANN: Any further discussion or comments?

Yes, Ms. Kruzen.

MS. KRUZEN: I'm Angel Kruzen. I'm a water sentinel with the SIERRA club.

I have a little bit of concern with footnotes and everything. If you have a toxic spill and it kills the aquatic life, it does take time for it to regroup. And if you keep -- you know, maybe you go nine months down the road and then you have another event, that doesn't give the aquatic life adequate time to regroup. So I think we need to, you know, look at this a little bit maybe -- I'd like some more information on this before some -- you know, you

start putting foot notes in about, you know, storm events. I

mean storm events, yes. I mean, we have storm events on the Jack's Fork that take the horse manure and puts it in the creek, okay, are we going to -- you know, so we have killing happening in the Jacks Fork with aquatic life, do we ignore that because it's a storm event? I think we need to be more protective of the aquatic life.

CHAIRMAN HERRMANN: Any other comments?

Mr. Ford.

MR. FORD: I would like to address Angel's comment. This foot note applies because the specific water quality criteria for chlorides or for any other toxics are based upon a four-day averaging period. In other words, when the research was done to determine the toxicity, there was a test study length and in the case of most of these, it was four days, so we believe, and also the EPA guidance says that when you evaluate that criterion, in this case chloride, you need to make sure that that value that you're comparing to the criterion is a value which is maintained over at least a four-day period, because that's what the research that set that criteria number was based upon. So we think we're on pretty solid ground here following the EPA guidance of how we're supposed to be interpreting their criteria.

MR. LODDERHOSE: And, Angel, I think you

made a good point. And the other side of the equation is you have to look at the acute criteria. Because if you have an exceedance of the acute criteria, you will have that impact that you talked about, so we're cognizant of that.

But what we're saying is that since you're not exceeding the acute, and the chronic event is less than four days, there is no toxic event, there is no recovery of the biode required.

(Inaudible.)

MR. LODDERHOSE: Right. What we're proposing -- Right. What we're proposing would prevent that also.

CHAIRMAN HERRMANN: Is there no other comments? Then we'll call for the vote on the motion.

COMMISSIONER KELLY: Yes.

COMMISSIONER HARDECKE: Yes.

COMMISSIONER PERRY: Yes.

CHAIRMAN HERRMANN: Yes.

Motion passes.

Now, move to Trent Stober, MEC Water Resources.

MR. STOBER: Good morning, Commission. My name is Trent Stober with MEC Water Resources in the fine city of Columbia. We've talked about Rolla for quite a bit but there is another engineering school up the road --

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The topic that I'd like to discuss today is going back to the statistical approaches that have been recommended within the listing methodology. And just to start off, I sincerely appreciate the Department's effort and the Commission's effort on working through this methodology

document and especially Phil, John Ford, and Rich Burdge have invested a lot of time. And I just go on record, I truly, highly respect John Ford's opinions in these matters of water quality, and I don't think that there would be a -- not to discount the other staff there, but not another staff at DNR that I would favor to control this process.

We -- I think as you've gone over, there is several concerns that I think a wide array of stakeholders would have with respect to the use of the null hypothesis, in particular as John showed with the Mercury data that were

presented. And in using those high levels of confidence, either for demonstrating that something is impaired or for demonstrating that it's unimpaired, I think, places a high burden of proof on either one of those -- either one of those decisions use attainment decisions that have to be made. And by placing such a high burden of proof both ways, we -- we've got a high rate of false positives or what we'd determine as Type II errors, errors in which we either call -- you know, make an attainment decision that says that a water is unimpaired, when actually it's impaired, or on the flip side considering something impaired which is truly unimpaired. Specifically to the human health related water quality criteria. You know, there is several conservative assumptions that are already at play within those criteria. John addressed one of those and one that I'm fairly familiar with, with the constituent of atrazine, which is a parameter

that's evaluated with respect to drinking water supplies, human health exposures and so forth, and our water quality criteria is based on the maximum contaminant level included within the Safe Drinking Water Act side of things.

And just to give you a little bit of light on the various steps that were used to determine that criteria, it's essentially risk based, based on a one-in-a-million chance of a cancer occurrence with a 70-year exposure at this

constant level of atrazine, with drinking two liters of water a day. And there was additional safety factors thrown into the mix with developing that MCL that put another thousand-fold safety factor on top of that.

And then you compound that with the fact that actually nobody is drinking raw water from these reservoirs that's being treated in a water treatment plant, you know, we've got a -- we're fairly safe that the -- that those levels that we have in the reservoir are not contributing to a true human health impact.

And then on the -- in the case of bacteria, which is potentially really problematic with the -- with these statistical calculations, because with bacteria, they're what we term, logged normally distributed, so you can have bacteria levels that will vary orders of magnitude, particularly during storm events, compared to base flow events. And there is some account for that within the statistical process, by taking it back to these -- to a long normal distribution, but particularly for small data sets,

where we've gone out and collected maybe one sample during a storm event, and we've got two or three during base flow events, that one sample -- where, again, we could have two orders of magnitude higher levels of the e-coli for this instance, can really skew the data set, can skew the

geometric means that we calculate and determine the compliance with the criteria on, and that can also really effect those confidence limits, the -- you know, 90 percent confidence limits and so forth, those become very big in these small data sets and particularly problematic with small bacteria data sets.

And since we've lost what was commonly referred to as the high-flow exemption within the last standards review, that pulls all of those data back into use assessments that weren't in earlier years.

EPA, in their listing methodology, states that states should attempt to minimize the chances of making each of the two errors, either considering a water impaired that's truly not impaired or on the flip side considering something unimpaired that's truly impaired. I think I got those two right.

So anyway, what we would suggest is to revise the significant level -- significance levels within the listed methodology tables to go from -- for all criteria where we have a -- don't worry, I'll give you a handout for some language associated with it, but for all of these criteria that have a one-sided hypothesis test, we bring

those significance levels down to -- or up to, however you want to look at it, .4, which draws both of those closer to

the mean or the geometric mean, whatever central tendency you use for the statistics. And that way we try to address one of the suggestions that EPA has, I believe, in that we minimize the risk of that Type II error, the false positive error.

Also, we've got a recommendation for small data sets, particularly data sets with five samples or fewer, to rather than submitting them to a one-sided hypothesis test, as John sort of showed, if you could remember, we had those upper and lower confidence limits at 90 percent, 75 percent, 60 percent and so forth, until you get to the average.

In these cases, what we'd recommend is evaluating that upper and lower 75th percent confidence limit, and if the data or the criteria falls within that bound, then that suggests that we don't have enough data or information for a conclusive use decision and so that would be a good water to put into category 3(b), where it -- the water doesn't just drop off of our radar screen, but should be prioritized for further monitoring.

And I think that aligns with, again, another EPA listing methodology suggestion that states that generally decisions should be based or -- should be based on very small data sets only where -- or only when there is overwhelming evidence of impairment.

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So if that lower 75th percentile confidence interval is up above the criteria, then our suggestion is that would help demonstrate that there is truly an issue and that needs to be addressed.

So I've got those recommendations, as well as one other, that I'll pass along.

I think I've given them one as well.

So if we can stick to the first recommendation, since we've made this -- or we would suggest this change to the approach for these data sets that have few number of samples, five or less, we would need to sort of tweak the definition of category 3(b), and what I've suggested is that we say that available data suggests potential non-compliance rather than suggesting non-compliance with our standards. And the current language goes on to say -- I think the available data suggests potential non-compliance with the state water quality standards, but more data is needed to make -- to meet listing methodology data requirements or to make conclusive use attainment decision. And then add in the second sentence. This would include inconclusive statistical tests for small data sets or -- and then you go on to the data quality issues for waters in the category 3(b). So again, later on in the document, I think we can define what an inconclusive statistical test is.

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Let's skip over the antidegradation thing,

that's just a -- something I caught this morning but --

And if you go on, page 21, at least in the document within the packet I was looking at this morning, page 272, essentially anywhere in table B(1) where we see the term "Within the analytical tool hypothesis test one-sided confidence limit," we would change the significance level, the number on the right side of the table to .4 rather than -- there are several .1's, .25's, and so forth. So they're both -- when we have a null hypothesis that says that the water is unimpaired, you know, that level goes up. And when the null hypothesis is that it's impaired, the confidence level -- or the, yeah, confidence level goes down. Again, drawing it closer to the best predictor we have of the data set, the mean or geomean.

And then also in -- to foot note within that table under these -- where we see this analytical tool hypothesis test one-sided confidence limit, add a foot note that describes what I tried to explain earlier with the data sets of fewer samples.

And then lastly --

COMMISSIONER HARDECKE: Can you do that again?

MR. STOBER: What's that?

COMMISSIONER HARDECKE: You mentioned the

one-sided confidence limits -- or you can go ahead and go through this and then --

MR. STOBER: Okay. Just lastly, and this is a

last-minute thing that I saw, but there was just a point on page 13 where we talk about the antidegradation provisions, and testing whether or not there is a declining trend in water quality and so forth, we've suggested that that should only apply to Tier II or Tier III antidegradation.

All waters have to comply with antidegradation provisions, truly the Tier II and Tier III's that we need to concern about declines in water quality or declines from existing water quality conditions, let me say that.

So, Ron -- Commissioner Hardecke?

MR. HARDECKE: Could you give the definition that you use under confidence limit -- or what you went through initially?

MR. STOBER: Okay. Yeah. John is -- you want to put 60 percent on there? Okay. Yeah. There you go.

Currently, right now, we're using -- or it's proposed to use either a 90 percent or 75 percent confidence level, so if your null hypothesis is that the water is impaired, you would have to be 90 percent confident that the water is unimpaired to keep -- to not list it as -- in category five of the impaired list. So, you know, in that

case, you're highly confident that it's not impaired.

On the flip side, you know, you could be drawing in several, what we've termed, Type II errors, which are that the water is truly unimpaired and we've considered it impaired.

So by drawing it down to the 60 percent confidence level, we try to minimize the Type II errors or these false positives, if you will, and try to really identify the true problem waters that we have.

On the flip side, there is some other use attainment decisions for, for example, livestock and wildlife watering, where the assumption -- the null hypothesis assumption is that the water is unimpaired and you have to demonstrate that it's impaired and that's at a -- that right now is also at a 90 percent lower confidence limit. So we have to be highly confident that it's impaired for it to truly be there.

And, again, on the flip side of that, we've really identified that we're very confident that that's impaired. On the other hand of that, we've also probably let some waters go as unimpaired that were truly impaired.

So I think that's a balance between, I think, both spectrums. And again, I would just view it as trying to avoid this Type II error, the error that we consider

something impaired that's really unimpaired or that we'd consider something unimpaired that truly is impaired.

Did that clear anything up? I don't know if John would back up that definition of the null hypothesis.

COMMISSIONER HARDECKE: We would probably be bringing the range closer to the mean.

MR. FORD: When we proposed the 90

and 75 percent confidence limits, we weren't working with, you know, divine knowledge, it was -- you know, there is -- like I said, it's kind of a balancing act between how much confidence do you think you need that you're making the right decision, against your desire not to make the wrong decision in the other direction.

So we've discussed this. We're in agreement with the changes that he's proposing. Basically with the 60 -- we'll be using a 60 percent upper or lower confidence limits on the same variables that we were using the 95 or 70 for, and we'll be working with a little less confidence that we're making the right decision, but we'll be closer to the sample mean, and the sample mean is still the best single estimator of the population mean. So it's a trade off where I -- we may not be gaining or losing much, but it takes us closer to the mean.

We used the sample mean in the past and so we

think that the confidence limit, even though they're not really high, still give us an improvement over the sample mean which basically just gave us a 50 percent level of confidence. (Inaudible.)

MR. GALBRAITH: Mr. Chairman, just for clarification. This is what you're proposing, where you've got greater than five samples, but if you have five or fewer, you're suggesting going back to those 75's on either side, does that represent --

MR. FORD: Actually, it would be --

yeah, it would be a 75 percent confidence interval.

MR. GALBRAITH: Either way, depending on the hypothesis.

MR. FORD: We define a region and encompass 75 percent of the data around the mean.

(Inaudible.)

(Whereupon there was a long silence in the tape.)

MR. FORD: Some of these statistical procedures just don't work quite as well for small data sets as they do for larger. Right. We still have a procedure for identifying impaired or unimpaired waters for small data sets.

MR. GALBRAITH: You think what this

reflects is the realization that we're making big decisions sometimes on very small data sets and sometimes you can't rely on statistics to give you the right answer, but we don't want to lose track of those waters, that's why we have a 3(b) list to keep them on the radar, collect more data, and make an assessment in two years, is that --

CHAIRMAN HERRMANN: Any other questions or comments?

COMMISSIONER PERRY: Yeah, I just -- mine were a little bit more of the practical nature. I'm looking at the table B1, and I count; one, two, three, four, five places that mentions the hypothesis test, and then under the "Toxic

Chemicals and Tissues," it's listed under three or more samples. Are you proposing that that limit in the column. Wherever those are listed be .4?

MR. STOBER: Yeah, what we would suggest is to -- the less than three samples would be compared to this foot note, which would be this foot note 16, that looks at the 75 percent --

COMMISSIONER PERRY: (Inaudible) compared to a foot note 14.

(Inaudible)

MR. STOBER: That would be a good place for a new foot note, so we don't have to read number --

that -- my recommendation would be that would be removed.

UNIDENTIFIED SPEAKER: (Inaudible.)

MR. STOBER: Right. And then --

UNIDENTIFIED SPEAKER: (Inaudible.)

MR. STOBER: Right. So that we would delete that top row. It says "Less than three samples," delete the "Three or more samples," and just say it's a hypothesis test, one-sided confidence limit, scrap the .25 and Mercury .1 for other contaminants and just make it .4.

COMMISSIONER PERRY: And that's also true for -- as you move down that table, the next one to skip drinking water 3, 4?

MR. STOBER: Right. Those would all -- we would change all of those significance levels to .4.

COMMISSIONER PERRY: And then see where it's

noted foot note 15? Should that be changed to 16?

MR. STOBER: I would -- or you could just -- you could replace foot note 14 with the foot note that I recommended.

COMMISSIONER PERRY: Okay. In that case, in the ones I'm talking about, it -- I think it says footnote 15.

MR. STOBER: Right.

COMMISSIONER PERRY: And replace that as well

as 16?

MR. STOBER: That could stay in there for -- that could go ahead and be footnoted by the .4 that would be replaced there.

COMMISSIONER PERRY: So in that foot note, we would have to change it to .4 as well?

MR. STOBER: I don't have as much of a problem with using the .1 in that case, because that's considering what's actually being consumed.

You know, the difficulty there is -- is that the -- you know, the water treatment plant operation can be -- it's just not all related to the raw water source water quality; right. We have water treatment operations and maintenance and so forth, and that's the only other consideration is that that really can be influenced by the actual operations of a given community or given public drinking water supply.

COMMISSIONER PERRY: What are you suggesting we do then?

(End of Tape 2, Side A.)

(Start of Tape 2, Side B.)

MR. STOBER: We're talking about foot note 15 with comparison to the MCL's.

COMMISSIONER PERRY: Now, I'm lost, because I

see a foot note 15.

MR. STOBER: It goes along with drinking water supply.

COMMISSIONER PERRY: I'm on page 270.

COMMISSIONER HARDECKE: In the clean the copy.

COMMISSIONER PERRY: I had to go to the clean copy because they didn't have the table in the other copy or I couldn't find it.

MR. STOBER: I don't have any objection to -- again, when you're considering finished drinking water, it's much more complicated than just the raw water supply. So I wouldn't have any problem with just removing that foot note overall. Will that change all of the foot note numbers?

COMMISSIONER HARDECKE: They don't match up.

COMMISSIONER PERRY: They don't match up. A ha.

MR. STOBER: That's why I've been confused this whole time. No, I'm just kidding. Right.

COMMISSIONER PERRY: (Inaudible.)

COMMISSIONER HARDECKE: That's 16 on 243. Inaudible.

MR. STOBER: So then do we even need a foot note?

COMMISSIONER PERRY: (Inaudible.)

MR. STOBER: Right.

COMMISSIONER PERRY: So, if I were to want to recommend an amendment, would I indicate that for minus the drinking water supply raw, that the number in the last column should be .4?

MR. STOBER: Right. All significance levels where the analytical tool is a hypothesis test, one-sided confidence limits. So if we want to go down through it, we would have -- bottom deposits would be .4. We'd skip over the binomial probability, go down to fish consumption, that would be .4. And then drinking water through the end of the table -- I'm sorry, up above the -- all of the confidence intervals on what I have as page 273 would be .4.

COMMISSIONER PERRY: For -- is that for fixed consumption on -- down on page 240?

MR. STOBER: John, which foot note numbering is really right? Is it the tracked changes one or is it the --

MR. FORD: (Inaudible.)

COMMISSIONER PERRY: So where it has that 15,

and 15, does that remain?

MR. STOBER: And we don't need 14. We

don't need foot notes 14 and 15 on page 273. If you have foot note --

COMMISSIONER PERRY: Fourteen is at the bottom of the page.

MR. GALBRAITH: Sixteen as you've got it here?

MR. STOBER: Or, yeah --

MR. GALBRAITH: Whatever, it comes.

MR. STOBER: -- add that as foot note 14 and let it trickle through the document.

MR. GALBRAITH: Yeah.

MR. STOBER: And then, lastly, and I would think that John would be able to do this pretty easily by the time the document is revised, is to -- there is several references after these tables, references and examples of this hypothesis testing. I just suggest that we change all of those examples to clearly reflect the .4 significance level. At five o'clock in the morning, I didn't go ahead and rerun all of those numbers for you.

CHAIRMAN HERRMANN: If there are no other comments or questions, the Chair would entertain a motion relative to the recommendation.

COMMISSIONER PERRY: I think we have another one.

MS. WEST: Just one. On Trent's suggestion that he handed out on page 13, where it talks about Tier II or Tier III antidegradation provisions, I would disagree slightly that Tier II should not be included. Tier II waters can be allowed to have some degradation if certain procedures are followed allowing that or justifying that degradation, particularly a socioeconomic -- an important socioeconomic development analysis, alternatives analysis, things like that. So Tier II waters may be allowed to degrade after those studies are completed, public stakeholders are given an opportunity to comment, and things like that. So I would suggest that only Tier III waters be included in his revision, because they are not allowed to degrade.

CHAIRMAN HERRMANN: Comment on that suggestion? Do we have to have a comment on that, Phil?

MR. SCHROEDER: Well, we agree with Mary, and we're just trying to figure out how to raise that in this document to help you with your motion.

Maybe we could say something to the effect that -- and I'm looking at page 264 and the language that Trent references. "For those waters to which the antidegradation provisions in Missouri's Water Quality Standards apply, statistical analysis as per pollutant and beneficial use

designation table 1 must show no significant change in water

quality beyond that allowed for Tier II waters and" --

COMMISSIONER PERRY: (Inaudible.) For those waters to which Tier III (inaudible) --

MR. SCHROEDER: Right. But -- well, I was just trying to find a way to also mention that Tier II waters, as Mary just stated, they have to be protected at current water quality until the study is done, that would warrant the lowering of water quality. So I'm trying to get the phrase in there to say just that that must show no significant change except for those allowed under the antidegradation policy, or something like that.

This is one of those instances that begs for some word smithing. I mean, we could simplify it and just simply say that where antidegradation provisions apply, those provisions must be upheld or something to that -- (inaudible.)

MR. SCHROEDER: Yeah, I'd just scratch out "For those waters" and just reinsert a sentence that simply says, Where antidegradations apply, those provisions will be upheld.

COMMISSIONER PERRY: (Inaudible.)

MR. SCHROEDER: Delete the sentence starting with "For those waters" ending with "And water quality has

occurred." And just reinsert a sentence that says, Where antidegradation provisions apply, those provisions will be upheld.

UNIDENTIFIED SPEAKER: Where antidegration (Inaudible.)

COMMISSIONER PERRY: Rewrite that sentence and say Where antidegradation provisions and various water quality standards apply, those provisions shall be upheld. (Inaudible.)

CHAIRMAN HERRMANN: Comments on the suggested revision?

If there would -- then I would entertain a motion relative to the recommended revision to the revision.

MR. GALBRAITH: Did we ever have a motion on John's proposal? So that's -- we just need really one motion; is that correct?

COMMISSIONER PERRY: I did make a motion that we approve John's.

MR. GALBRAITH: You did?

COMMISSIONER HARDECKE: We voted on that.

COMMISSIONER PERRY: And we voted on it.

CHAIRMAN HERRMANN: Yeah.

COMMISSIONER HARDECKE: We're to Trent's now.

MR. GALBRAITH: I'm sorry, I meant Trent. Yeah, I'm sorry.

COMMISSIONER PERRY: Yeah, there is no motion on Trent.

CHAIRMAN HERRMANN: There is no motion yet.

MR. GALBRAITH: Okay. Whatever this one is. Whoever you are.

COMMISSIONER PERRY: I move that we accept the

revisions made by Trent Stober as revived -- I'm sorry, as revised in discussion, specifically that on page 264, the third sentence in the paragraph under "Physical, Chemical, Biological, and Toxicity Data" be deleted. And then replaced with the sentence "Where antidegradation provisions in Missouri's Water Quality Standards apply, comma, those provisions shall be upheld."

And then on page 272, the bottom line to the far right, that box be replaced with ".4" instead of ".25."

And similarly on page 273, the last column, the first box reads "Nonapplicable," the second one shall read ".4," the third one shall read ".4," the fourth ".4," and the next one is blank, the next one shall read ".4," and the last one shall read ".4."

Finally, foot notes 14 and 15 shall be deleted and replaced with a new foot note 14 that Trent has indicated as foot note 16 in his handout.

COMMISSIONER HARDECKE: Seconded....(Inaudible.)

CHAIRMAN HERRMANN: Seconded by Mr. Hardecke. Any discussion?

MR. GALBRAITH: May I ask for a clarification of the motion? You start -- in changing the numerical values to .4, you started with the first --

COMMISSIONER PERRY: Oh, you're right.

MR. GALBRAITH: Did you mean all of the values in that last column? Because I think that is what Trent was -- I think that was Trent's suggestion.

COMMISSIONER PERRY: I think you're correct. The one that says "Conventional chemicals," does not mention hypothesis testing. But you're right, I missed two at the top.

MR. GALBRAITH: All right. Thank you.

COMMISSIONER PERRY: The other ones that say -- I think I need that clarified, I don't understand.

Under "Conventional Chemicals," it has 40 or fewer samples, and then more than 40 samples, and neither one of those refer to a hypothesis test, were those also to be changed?

MR. STOBER: Those were not (Inaudible.)

COMMISSIONER PERRY: Okay. But what we are talking about is the two at the top of the page on page 272; correct?

MR. STOBER: (Inaudible.)

COMMISSIONER PERRY: And that referred to hypothesis test for color?

MR. STOBER: (Inaudible.)

COMMISSIONER PERRY: The .1 at the top.

MR. STOBER: (Inaudible.)

COMMISSIONER PERRY: Okay. That's for color, but where it says "Bottom deposits," doesn't that say "One-sided confidence limits"? And you want that to be changed to ".4"?

MR. STOBER: (Inaudible.)

MR. GALBRAITH: I think that's what his motion -- that's what's on the piece of paper here, just you didn't note it in your motion, so I would --

COMMISSIONER PERRY: You're right.

MR. GALBRAITH: I didn't know if that was --

COMMISSIONER PERRY: You're right, I didn't, I missed that one.

MR. GALBRAITH: Okay. Thank you.

COMMISSIONER PERRY: So there are actually two on page 272.

CHAIRMAN HERRMANN: Okay. Are we clear?

Call for the vote, please, Darlene.

COMMISSIONER HARDECKE: Yes.

COMMISSIONER KELLY: Yes.

COMMISSIONER PERRY: Yes.

CHAIRMAN HERRMANN: Yes.

Motion passes.

We'll now ask Mary West.

MS. WEST: Chairman Herrmann, may I have just one minute?

I'm Mary West with the Missouri Public Utility Alliance. I would like to talk to you about a change to category 4(b) on page 255 in the clean copy. And this section addresses waters that are impaired but a TMDL is not expected to be required. The Department would list waters that a water-quality based permit has been listed -- has been

issued or is expected to be issued within the assessment cycle or other pollution control requirements have been made.

I would like to suggest that you add language after "Other pollution control requirements," in the second sentence at -- in the second bullet that says "Including voluntary control plans." The reason for this is there are a number of water shed management plans, nonpoint source management plans, salt projects, things like this that could address impairments in a water body, and I would like us to recognize that those also would be correcting the impairment

and not just requiring an NPDES permit or some other such instrument to be issued, to be listed in that category.

CHAIRMAN HERRMANN: Your wording again, please, Mary?

MS. WEST: After "Other pollution control requirements" in the second sentence of the second bullet, insert "Including voluntary control plans."

CHAIRMAN HERRMANN: Questions or discussion on that item? Yes, sir?

MR. DELASHMIT: This is one that we would have a little concern with, mainly because the way that it -- we are directed to look at it in category 4(b)is that other pollution control requirements are in place and we interpret that as requirements to mean something that is enforceable and required and so using something that's voluntary probably wouldn't make the mark. And our guidance, even specifically,

speaks to that as that it should be a requirement, not a measure -- a permit that may be issued in the short-term or a voluntary permit. So we would ask that you continue to keep the word "requirements" and it should be something that has been issued and is final to move something into category 4(b).

MS. WEST: As nonpoint sources are not permittable, there is no way to recognize nonpoint source

instruments that may be executed to correct a water body impairment. Water quality trading, even I believe some of the EPA guidance allows for municipalities or permitted entities to pay for nonpoint source corrections at -- in lieu of doing additional treatment at a treatment facility. So if EPA would not recognize those as getting you further toward correcting that impairment, then the only way to address those are through a TMDL or through permits. And I think that's kind of one-sided. But you're the authority so -- but I do think that a lot of work goes into these water shed management plans and they should be recognized in some manner, and those water bodies should not necessarily be placed in category five.

UNIDENTIFIED SPEAKER: I would like to comment in support of this recommendation. I think that there is evidence given that there are TMDLs now that are based on voluntary plans, that clearly there is a recognition that the voluntary measures can be effective in addressing impairment, and so I would encourage the Commission to

approve this suggestion.

MR. DELASHMIT: One thing. I certainly think that what Mary says is right, that the voluntary measures deserve to be recognized and we certainly do appreciate those. As a matter of fact, if they're

successful, I think the ultimate goal of returning the water body to water quality standards would certainly result in the (inaudible) that's the best way to handle it. But the way we look at it, and I just have to let you know what our guidance is, is that we want these things to be requirements and enforceable in order to put it on the same category.

CHAIRMAN HERRMANN: I think Staff has sent you -- EPA, I'm sorry, a critical number of suggested permit revisions in lieu of a TMDL. Are any of those approved?

MR. DELASHMIT: When we do that, a permit in lieu of, and I think we even have an acronym for that, too. PILO or PILL and -- yeah, we can have fun with acronyms at EPA. But one of the things that -- and I don't know if we necessarily agree or disagree on this all of the time but EPA's view is that when a permit is going to be issued, that's still not adequate justification to remove it from the list. But once the permit becomes final and is in place, then we're happy with that and that would allow (inaudible) or moving it into the other (inaudible.)

CHAIRMAN HERRMANN: Permits issued and effective?

MR. DELASHMIT: Then it does become a requirement.

COMMISSIONER PERRY: Are you also at issue

with this line of the book, or is expected to be issued within the assessment cycle?

MR. DELASHMIT: Yeah, our comments would reflect that, yes, we would much prefer, according to our guidelines, that they be requirements not expected. Even called a -- had another acronym for that one which was FTP, which is not satisfactory, and that stands for “Fixing To Permit”. That would be something we just really couldn't accept at least -- (inaudible.)

Something could happen, for example, a permit could be appealed and some other things could happen that would cause it not to go into place, so we're much more comfortable if it's actually effective and enforceable.

COMMISSIONER PERRY: I have a question for Mary. Is this a hypothetical or do we actually have some conditions in which there are voluntary water shed control plans which would cause it, if approved, to be put into category 4(b)?

MS. WEST: Well, I can think of -- well, even the atrazine example that John used in the statistical analysis on Monroe City Lake, atrazine is not typically discharged from a permitted entity. The -- outside of the TMDL, if the farmers or the people in the water shed or that drinking water lake would get together and do a voluntary

water management plan, and typically those have -- there is a protocol to be followed, DNR is usually at the table, and a number of others to develop these plans, that document for drinking water supplies anyway, is then subjected to DNR as a voluntary plan. It's not part of any permit, so the water body would be listed as impaired for atrazine, but then could be listed in category 4(b) because of that voluntary plan put together by the people who are contributing in that water shed. Otherwise, you have to go through the TMDL process and all of that. So -- and I don't know how to address the permit issue, you know, because that pollutant does not come from a permitted entity.

MS. HOLLOWAY: Apart from the EPA guidance, the 2006 guidance, and this is from page 56 of the guidance, but it's specifically referring to decisions to include segments in category 4(b) and one of the -- they give examples of cases in which controls may be sufficient to support such a decision depending on facts of specific cases, and one of the examples is "A water body is impaired by nonpoint sources which have already implemented some or all of certain measures that will result in attainment of water quality standards in that water body in a reasonable time. Controls are unlikely to be removed or reversed; e.g., water shed restoration measures pursuant to a 319 grant." So

that's one example where there wouldn't necessarily be a -- a rule or a requirement that could just --

COMMISSIONER PERRY: And that guidance is it -- are you referring directly to 4(b)?

MS. HOLLOWAY: Yeah.

COMMISSIONER PERRY: That they be placed on 4(b)?

COMMISSIONER PERRY: But wouldn't that be a voluntary water shed control plan?

COMMISSIONER HARDECKE: Sufficient to place a water --

COMMISSIONER PERRY: But if they did that voluntary plan on a 319 grant, it would be okay?

MR. DELASHMIT: No. And I think in this specific instance, where there have been some other things that were considered -- because there is -- it's not a hard and fast complete rule, but I think in the predominant circumstances. And what we've specifically seen with permits that are expected to be issued and attempts to delist the water bodies prior to the permit being issued, that is something that we disagreed with in the past. But there may be something specific in the 319 grant program and that's -- unfortunately, I'm not very savvy in the 319 grant program, but the guidance does site some specific circumstances where

it could be issued, and if these -- I think a key sentence in what Leslie just said, they are not expected to be removed or there is some degree of certainty with which these things are

established. But the existence of a plan itself isn't really sufficient for us to remove the water.

CHAIRMAN HERRMANN: Would it be acceptable to all parties or most parties if we incorporated the language that Leslie just read in the Federal guidance?

MR. DELASHMIT: I don't think I could dispute that.

CHAIRMAN HERRMANN: I hope not. Does that cover the subject?

COMMISSIONER PERRY: Well, it covers a smaller range of incidences, but she was talking specifically about those plans that result from 319 grants.

MS. WEST: I wouldn't have concern about the 319 grant reference specifically, I think if we included the general language that she cited, 319 funds are very limited. I think the statistic that Ed gave the other day at the Clean Water Forum or someone said maybe 4 million a year for the state of Missouri. So, you know, that is a very small amount of grantees that would be eligible for that in that case. And I think there are a larger number of voluntary plans that could be eligible. And, you know, I'm

not saying that someone can just promise to do something and get into this category, there has to be -- you know, there is a procedure in place for an improvable water shed management plan, and I think that that would have to be followed in order to --

MR. GALBRAITH: Could it be 319 or other established funding source? Because there are, you know --

CHAIRMAN HERRMANN: (Inaudible.)

MS. WEST: Well, and ag nonpoint source grants and --

COMMISSIONER PERRY: Right.

COMMISSIONER PERRY: -- you know, you have all of the salt grants -- all of those other ones.

MR. GALBRAITH: Salt, yeah.

COMMISSIONER PERRY: Is your point that you're concerned that these voluntary control plans have not been implemented?

MR. DELASHMIT: That's part of the fact that they are -- (inaudible.)

COMMISSIONER PERRY: You know, because it seems that the source of funding --

MR. DELASHMIT: -- (inaudible) and someone could choose to not do it and there would be no way that the State could compel them. I think we will review

them on a case-by-case basis as they are submitted, but -- so there are, and as Leslie read, there are some circumstances where it would be adequate, but I wanted to give you a heads up that it may not be adequate in all circumstances, and maybe even in most circumstances. But the existence of a plan, I guess I could draw a parallel to something like a

super fund program, where you don't say that a site comes off the MPL list just because you've written a decision document and you have a plan in place for cleaning it up, you actually have to wait until you've done it. And that would be something similar here, the existence of a plan would not really be sufficient, but if the measures are in and implemented, I think that could possibly change our opinions. We would look at them on a case-by-case basis, but I didn't want you to think that the mere existence of a plan would be sufficient to move a water into category 4(b).

UNIDENTIFIED SPEAKER: (Inaudible.)

COMMISSIONER PERRY: Through the TMDL and this --

MR. DELASHMIT: Through TMDLs. And so those are -- the TMDL program specifically lays out what has to go in one and to be approved when they are. And we also, I think, expect that they will be implemented as well when the permits are issued.

COMMISSIONER HARDECKE: Once one of these plans gets established or are in the process of implementation, there is a structure to follow through. I guess what -- yeah.

COMMISSIONER PERRY: Now, are you going to object if we put this in here or are you just going to wait until we come up with a specific water body that we put on the 4(b) list, because we have a fully implemented voluntary control plan?

MR. DELASHMIT: We would look at it to see, does it satisfy --

COMMISSIONER PERRY: So it would be when it would actually come up on the 303(d) list that this provision would become into question?

MR. DELASHMIT: Correct.

COMMISSIONER PERRY: Not in what we pass here today? But I think it belongs in this document, so we tell all of those farmers out there that we're encouraging these plans.

MR. DELASHMIT: And I don't mean to discourage that, that -- we're very happy and would encourage the states to encourage these plans. We don't want to discourage them, but it's just not seen sometimes as adequate to delist the water body. Just as when we've seen, a permit

is going to be issued, we don't see that as adequate to delist the water body. But once the permit is issued and implementable, then it can come off the list.

COMMISSIONER HARDECKE: And by putting this in there, that would be an incentive to use that tool for the people in that water body.

MR. DELASHMIT: We certainly don't want to provide a disincentive to using that tool, but I think what I'm speaking about here is trying to delist the water body. Now, ultimately, if they do implement the tool, I think what the best case would be is that water qualities --

the level of pollutant begins to drop and the water quality meets water quality standards, which is by far the best way to get a water off the 303(d) list. And that would be the best result for everyone. But I think the mere existence of a plan isn't something that we can necessarily rely on to delist at that time. Now, maybe in the next listing cycle, you might have a result that you could cite and get it off the list in that.

COMMISSIONER HARDECKE: So we don't start and provide those thoughts, you know, to get to -- (inaudible).

MR. DELASHMIT: Right. But wouldn't perhaps an incentive to implement a water shed plan be to ultimately attain standards and get it off the list as well?

COMMISSIONER PERRY: This sentence reads "Or other pollution control requirements have been made or will be made during the assessment cycle that are expected to adequately address the pollutants causing the impairment." Now, is -- yes?

MS. HOLLOWAY: They're not mutually exclusive here. I mean, I think there is enough leeway in that language. There is still some discretion on the part of the Department to determine, Are these measures, in fact, going to bring this water into compliance? Are they adequate to, you know, get us back into compliance? So it's not an automatic that just my -- at least in my interpretation of what we're talking about here, that just because there are voluntary measures means that, you know, it's going to have

to go on 4(b).

But the point, I think that, you know, Mary is trying to make here, and that I'm trying to emphasize is that there should be some recognition in the State's methodology that, in fact, in some cases, voluntary measures are going to be adequate. And I think that's consistent -- I know you guys are going to have to look at it again, but I think that's consistent with what the guidance says. So it would seem to me, if you did make specific reference to the guidance in the methodology, and that was kind of where

Chairman Herrmann, I think, was headed, if you made some sort of reference to as, you know, enunciated in the 2006 guidance or something for category 4(b), then it would seem to me that that would cover, you know, everybody's attempts to be consistent.

COMMISSIONER PERRY: Could I add a sentence here? That says, This may include implemented voluntary water shed control plans as enunciated in the EPA guidance document.

UNIDENTIFIED SPEAKER: (Inaudible.)

COMMISSIONER PERRY: Right. Right. I just said "This may include."

MS. WEST: And I think that it would encourage, not just the farmers to participate in these plans, but sometimes there needs to be leadership from the permitted entity from the drinking water supply or someone

like that so this would provide some incentive for the permitted entities, than to maybe perhaps provide that leadership role to get these water shed management plans implemented.

COMMISSIONER PERRY: Okay. So I'd like to make a motion. Is there anybody further to speak on that?

CHAIRMAN HERRMANN: Is there anyone else? Have an opinion that they wish to express?

COMMISSIONER PERRY: I would like to move that on page 255 under category 4(b), under the second bullet point, there be added a sentence at the end that reads as follows: This may include implemented voluntary water shed control plans as enunciated in the EPA guidance document.

COMMISSIONER HARDECKE: I'll second.

CHAIRMAN HERRMANN: Seconded. We now would call for vote

COMMISSIONER KELLY: Yes.

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

CHAIRMAN HERRMANN: Yes. Motion passes.

I guess we're down to the last card, Leslie.

MS. HOLLOWAY: There is a lot of ground covered today and I appreciate all of the comments that we've been able to make on a variety of issues. There were a couple of other issues I just wanted to raise briefly and that is the status of the TMDL list, TMDLs that are under development now.

In reference to the discussion on atrazine

today, as you may or may not know, there is a proposed or a public comment period open now on a proposed TMDL for the Vandalia city reservoir and it gets into some of the issues that were discussed today with regard to what the standard is for atrazine using the drinking water standard for the raw

water measurements, and that again is an issue that we've raised previously in the previous cycles, but that's still, I think, an issue that we would like to raise in the future, in terms of whether that is the appropriate standard to use for determining impairment. And there are -- I'm aware of at least five other water bodies that are on the 303(d) list now for atrazine, so that comes into play here as we move through the TMDL development process.

There was also a discussion at the clean water forum Monday about TMDL's that are to be proposed within the near future by EPA and there is a schedule, apparently, that has not been met, in terms of TMDLs, that the department is responsible for preparing, but that EPA is now going to take the lead on and I know that Staff has agreed to provide a list of those TMDLs that will be issued within the near future.

I understand it's maybe 30 or so total, which is a pretty large, you know, number of TMDLs to be coming out for everybody to take to review very carefully, and I don't know exactly what waters those are, but guessing that there will be quite a few in that grouping that will get into some

of the more of the nonpoint source issues which are issues that we're watching particularly closely, knowing that there are 24 water bodies listed for sediment now and that gets

again at the issue that was raised earlier today, I think, by Commissioner Perry about waters that have been listed by EPA, that were not necessarily listed by DNR, and so we're getting into a time crunch, at least it appears that that may be the case where we're going to be trying to come up with more and more TMDLs on things that we have less and less definite criteria for. Nutrients are another example of that.

There is one TMDL out for comment now, Spring Fork Lake, that is based on nutrients. And there are some TMDLs that have been approved for nutrients with the thought being that down the road, we're going to come up with the criteria and that will be what we'll use as a basis, but I'm afraid that as all of these factors are colliding, that we're getting into, as I say, a time crunch, where we are going to be developing more and more TMDLs with less and less actual standards for the criteria that they're addressing. And that's really, I guess, the gist of my comments, other than what we've already discussed today.

COMMISSIONER PERRY: What is the reason for EPA assuming the lead on those three TMDLs?

MS. HOLLOWAY: My understanding is that those are water bodies that had been scheduled for TMDL development, should have already either been completed or been under way, and the Department has not been able to do

that for a variety of reasons. As you well know, various court cases and other things that have set other priorities for them, I imagine, come into play there pretty heavily. But as a result of the -- my understanding is it's as a result of the 2001 consent decree that these water bodies were to have already been under TMDLs for them -- were already to have been under way and so EPA is now obligated to take the lead on those within a pretty short time frame.

CHAIRMAN HERRMANN: I have a question for Mr. Delashmit, that these TMDLs that are promulgated by EPA, do they still require a 60-day public comment period?

MR. DELASHMIT: I believe so, yes.

CHAIRMAN HERRMANN: Okay. We will get those --

MR. DELASHMIT: Certainly.

CHAIRMAN HERRMANN: Because I have had and continue to have considerable heartburn over some of the results of some of the TMDLs. It gives the public and the people in Missouri who are responsible for the operation of maintenance of these facilities sufficient opportunities to voice their concerns or their opinions or their facts (inaudible.)

MR. DELASHMIT: That's fair.

COMMISSIONER HARDECKE: I don't know if you can answer this, but you referenced that there is no criteria on the nutrients, so what are we going to use to -- the TMDL or to evaluate or --

MS. HOLLOWAY: You might want to have the DNR staff, you know, address that more specifically. But in the TMDLs that have been issued or proposed, they have used measurements of nutrient levels in the water bodies over a period of time to try to determine something of a baseline or something of a trend is the way I would interpret that. And then they are comparing those levels to what they're calling a reference body or a comparable water body that they consider to be in compliance with water quality standards for nutrients that they consider to be unimpaired, I believe, for nutrients and trying to determine how closely they can correlate bringing one water body to similar levels or -- so it's --

COMMISSIONER HARDECKE: You could almost go back to comparing the Bourbeuse to the Meramac, in terms of color and --

MS. HOLLOWAY: Yeah, and I'm sure that Phil and, you know, John can talk further about how they go about determining how comparable those water bodies are, but --

COMMISSIONER HARDECKE: You want to comment on that, Phil?

MR. SCHROEDER: Yeah. When we don't have

criteria, I mean, obviously nutrients are not the issue, it's what nutrients lead to in terms of contrasting to algae and loss of clarity of water and how those conditions affect the uses of those water bodies, that's why they ended up on the list. So when we go through the process of trying to develop a TMDL, what we're aiming for is trying to restore the beneficial use to the water body. And we're using the same sign of -- kind of logic in science that we use -- right now -- we're trying to use right now in developing the criteria for nutrients where we can come up eventually with a numeric standard for nutrients that we know in various areas of the state lead to the kind of poor conditions in water that we're trying to prevent.

So what Leslie is saying is correct. I mean, we're going through the process right now of doing a TMDL, which is going to be very similar to the process of developing criteria. They're somewhat parallel.

The only reason why we're doing them now is because they're due to be done, and they're on the consent decree that EPA has signed. It obligates us all to try to get these TMDLs done timely. Otherwise, there is some

potential for being out of compliance, I guess, with the consent decree. It's important that we maintain it. So we really don't have much of a choice, we have to get these things done. Either the state does them or we turn them over, as we have on a lot of TMDLs here recently, and have

EPA do them.

And because we feel like we're in a position where we have some reasonable knowledge about the effects of nutrients and reasonable knowledge about nutrient levels in streams and lakes and how they're affecting beneficial uses of these waters, we feel we have a reasonable opportunity to do a reasonable -- or do a good TMDL list.

So we just want to go ahead and move forward. And if there are some specific concerns with the public with how we've drafted those --

(End of Tape 2, Side B.)

(Start of Tape 3, Side A.)

COMMISSIONER HARDECKE: -- a level of the phosphorous and nitrogen you're taking -- you're putting them -- classifying these as impaired, according to the observance of the algae growing in it?

MR. SCHROEDER: Right. There is a cause-and-effect that's observed, where we find that there is large amounts of algae, let's say, in an impoundment, and algae

-- and the algae growth is what's causing the impairments, it's reducing the aquatic life or it's reducing the use -- recreational uses within the impoundment.

And we have reasonable certainty that we can trace the algae growth back to anthropogenic sources of nutrients whether it would be nonpoint sources or point sources, then we feel we have sufficient information to begin

drafting and put together a plan to reduce those levels of nutrients of the discharge to those water bodies and then hope that cause-and-effect relationship reduce the algae growth.

COMMISSIONER HARDECEK: Is there a measurement of the algae growth or that's just a visual observation?

MR. SCHROEDER: Well, yeah, these -- things are changing with the way we're doing our listing methodology document now. In the past, we didn't quantify the algae, we just simply said that someone made a professional opinion, best professional judgment, that the algae growth was significantly more than what you'd find in a setting that doesn't receive anthropogenic sources of nutrients. So we thought it was a sufficient algae to interfere with the beneficial uses of that -- we didn't quantify it. We didn't say it was ten percent more, 20 percent more. Those judgments were not made.

So the targets that we're looking for now are simply based on, you know, what we're doing in our nutrient work group right now, in trying to develop criteria and how much algae growth is really too much, and when does it become an impediment to the beneficial uses of the water body?

CHAIRMAN HERRMANN: We're getting a little short on our availability of this room and we may get evicted shortly.

Roger Walker reminds me that someplace his card got lost, so we'd like to hear from Roger.

COMMISSIONER PERRY: You're going to talk on unknown pollutants?

I have a question. There are three other issues in those other things. Well, the one that had me concerned was the burden of proof.

MR. WALKER: Mr. Chairman, my name is Roger Walker, I'm with the group Reg Form, regulatory environmental group from Missouri. I'm starting to run out of gas like everyone else, so I think that will encourage me to be brief.

I do have two issues to talk about actually; one is threatened waters and I have a handout on that, and the second issue is unknown pollutants and a second handout on that. I'll treat these separately.

With respect to threatened waters, I'll just say

it very directly, is that we think threatened waters ought to be placed in category 3(b) or category 4(b). We think the reason for that is that those waters already currently meet water quality standards. We have a state statute 644036 which prohibits the Department from doing a TMDL if the water meets water quality standards. These waters would meet water quality standards and, therefore, nothing is to be gained by listing. And we think what DNR is requesting even goes beyond what EPA is required in its own guidance documents.

The statistical methods, as we've had some discussion of on lots of different issues, are not sufficient in our view to be listing these in category 5. And so we

have at the end here, suggested some alternative language which is very simple, it's just, we find it on page 254, was just simply to add future non-compliance to the category 3(b). And on 255 on category 4(b) to add -- or actually to delete "Required by local, state, or Federal authorities," and that is only to allow some voluntary measures to be implemented to meet those -- that could be implemented to assure that they meet future water quality standards.

The 254 and 255, we're just -- we're recommending mild, modest changes to category 3(b) and category 4(b) so that it will be more readily or easily -- more easy to -- is that a word, more easy -- it would be

easier to put threatened waters into those categories.

COMMISSIONER PERRY: Your underlining is what you want to insert?

MR. WALKER: The underlining is what is to insert, and the deleted is the strike-through on those. And we've had some discussions with the Department on this issue. I couldn't tell you what their thoughts are on this right now, but --

COMMISSIONER HARDECKE: I'm trying to find where you're at on page 255.

COMMISSIONER PERRY: It says "State water quality standards" perhaps would that be in the first line?

MR. WALKER: On page 255 under Category 4(b), that first paragraph, we're just going to delete "Local, state, and Federal authorities" so that --

COMMISSIONER PERRY: It doesn't seem to be in this final copy.

MR. WALKER: Okay.

COMMISSIONER PERRY: Is it --

MR. WALKER: I'm only looking at the handout that was passed on here.

COMMISSIONER PERRY: Oh, I'm so sorry, it's the first line here, you're right. We're in the wrong place.

MR. WALKER: Okay. I didn't include the entire

paragraphs, I just included the part that we wanted to either add or delete.

COMMISSIONER HARDECKE: (Inaudible.) We have some extra words at the beginning of the paragraph.

COMMISSIONER PERRY: (Inaudible.)

MR. WALKER: Well, I apologize for any error on that with the way I --

COMMISSIONER PERRY: No, that's fine. It's the first sentence.

MR. WALKER: I think what's confusing is I've quoted -- I used quotation marks where I'm referring to the language in the methodology and the other language is simply descriptive of what we're trying to accomplish.

CHAIRMAN HERRMANN: I think 4(b) is already -- your suggestion for 4(b) is already covered by the previous motion.

MR. WALKER: Right. It is at this point, yes.

And so for 3(b), really, just trying to add future non-compliance as an element of that so that threatened waters could be added readily.

CHAIRMAN HERRMANN: I guess I have to ask the question of John or Phil whether this category 3(b), I remember the old -- when we dealt with the 2002, we were dealing with five classifications of listing, and none of

them included what I think 3(b) is saying, that where you suspect that it may be impaired, that that goes -- that further study is needed. That, from my memory, was the 305(b) list and there was no mention of it in 303(d) list of those kinds of streams. If you had a suspicion but not proven, and you needed more study, that went on the 305, which is the water assessment group.

MR. FORD: I think your memory is correct. In other words, EPA has kind of driven the process so that every water has to be rated specifically in one of these five categories, and for a lot of the information that we like to compile and put into 305(b) report, we didn't have the level of data proof that's required under 303(d). So for those waters we kind of created category 3(b) as kind of a holding bin for other waters that we're concerned about, that we think have problems, but don't rise to the level of proof, the data doesn't, to put them in categories 4 and 5. So you're right, it's kind of a parking place for some of the things we think should be on the 305(b) list.

CHAIRMAN HERRMANN: So then when further

evaluation is done, further testing is done, and you prove, Oh, there really is no impairment, then we're going to have a heck of a time getting it off of the list again.

MR. FORD: Well, those wouldn't --

those are not on the 303(d) list, category 3(d).

CHAIRMAN HERRMANN: So they're not on the list?

MR. FORD: No, only category 5.

CHAIRMAN HERRMANN: Okay.

MR. FORD: So we can move around those as we're justified by our data.

CHAIRMAN HERRMANN: Okay. The flame in my heartburn just went out.

MR. FORD: Okay. Good.

CHAIRMAN HERRMANN: Okay. Any questions or comments on --

COMMISSIONER PERRY: I have one. Roger, why did you want to add that line that said "Available data suggests non-compliance or future non-compliance"?

MR. WALKER: Well, I guess you could argue it's not necessary to add that, we just wanted to make it clear that future non-compliance is essentially another term for threatened and that would allow that category to more readily accommodate threatened waters.

I mean, there are waters that need some further investigation, we don't think they need to be on category 5, they ought to be on category 3(b) or 4(b), and I think the

goal is to make it clear that in the listing methodology, that that was an appropriate place for those waters.

MR. WALKER: Well, then, I would leave it to others to comment on whether or not that language is actually needed, the terms "future non-compliance." I think what we're looking for is that sort of a place order that doesn't put you in the odorous provisions of category 5, but recognize that these waters need some additional investigation.

COMMISSIONER HARDECKE: Don't they go there anyway, though?

MR. WALKER: I think that's probably right, I think that's right. I think that's where they should go. I think they will go there. I think it was just to make it clear that this was an appropriate place for them in this case for others who were reading the methodology.

UNIDENTIFIED SPEAKER: (Inaudible.) Laughter.

MR. DELASHMIT: Actually, the source for this, for our position on it, which is that threatened waters should be on the list, is a federal regulation, so this goes above the level of guidance, it's the 4-D Code of Federal Regulations 130.7 which says that the states have to provide EPA every two years a list of water quality limited which has been further defined as impaired and threatened waters. So that's where we're getting --

COMMISSIONER PERRY: And how does that differ

from the 305(b) list?

MR. DELASHMIT: The 303(d) list -- this is the 303(d) --

COMMISSIONER PERRY: 305(b); right? Or is it 503? 305?

MR. DELASHMIT: No, 305(b) is due every two years, too. They're both due every two years.

COMMISSIONER PERRY: Okay. How does that threatened list differ from the 305(b) list? What you're talking about by Federal regulation, is that required for the 303(d) list --

MR. DELASHMIT: 303(d) list should contain both impaired and threatened waters, is what that particular regulation says. So that's what drives our position. And I would --

CHAIRMAN HERRMANN: If it's category 3(b), it gets listed on the 303(d) list?

MR. DELASHMIT: No, 3(b) -- only category 5 is the 303(d) list.

CHAIRMAN HERRMANN: Okay.

MR. DELASHMIT: I had the same misconception when I got here, that all of these different categories are all part of the list, but that's really not true. Category 5 is really the only category that is on the

303(d) list.

CHAIRMAN HERRMANN: So if it's a threatened water, it goes on the 3(d) listing?

MR. DELASHMIT: No, if it's threatened, it's supposed to be in category 5, according to EPA's regulations. Yeah, we can --

COMMISSIONER PERRY: It sounds like --

COMMISSIONER HARDECKE: Then how is it going --

COMMISSIONER PERRY: -- EPA has got those two as confused.

MR. DELASHMIT: No, I think what's happening, and what has happened, as John explained, is that we've moved to this integrated report, which is an attempt, I think, to kind of merge the two, but you have to split out of all of these different categories. But our concern over what Roger just suggested is that it's in an EPA -- it's in a regulation, a federal regulation, that says you're supposed to list both impaired and threatened waters. But looking at what the Department is proposing, I think that, you know, a fairly rigorous analysis has to be done before you're viewing the water as threatened. And that's certainly not inappropriate. But still I'm here to tell you what the regs --

COMMISSIONER PERRY: Are you saying that we

have to put those with -- that are threatened in the category 5 or in the category 3?

MR. DELASHMIT: Category 5 is what our regulations says that threatened waters have to be submitted

in the list of im -- water quality limited is the way EPA defined -- or underneath that, water quality limited characterization is both impaired and threatened waters.

CHAIRMAN HERRMANN: If it's --

MR. DELASHMIT: And the threatened, I think they further defined as waters that are expected to become impaired within the next listing cycle of two years.

CHAIRMAN HERRMANN: Okay.

MR. GALBRAITH: Could I just remind everybody to use the microphones as we're trying to capture the --

MR. DELASHMIT: Why not?

MR. GALBRAITH: Yeah, you're marginal -- yeah, you're under short ...

MR. DELASHMIT: Okay.

COMMISSIONER HARDECKE: So is actually what has been done, we've expanded the 303(d) list to include more waters that --

MR. DELASHMIT: That's been in there -- I mean, they -- the desire to have threatened waters in the

303(d) list has been in EPA regs for quite awhile.

CHAIRMAN HERRMANN: This differentiation between threatened and suspected, there is a difference between 5 and 3 as you suspected and it requires more study, it belongs in 3(b); right?

MR. DELASHMIT: I would think -- and they

define what is considered to be threatened in there, which is that it's expected to become impaired in the next two years. I think you could certainly suspect, but it might not have the immediacy that a threatened water would have.

CHAIRMAN HERRMANN: Because you have some testing parameters on which to base the threat?

MR. SCHROEDER: I talked earlier about the time trend analyses, and John and I have talked about this, and the time trend analysis would require a great deal of data, a great deal of very good data, and we don't think that there are going to be very many instances where we're going to find a water that's truly threatened to meet the criteria that says we expected to get -- to meet -- to not meet water quality standards within two years. It meets it now, but it's not in two years. The data veracity would have to be extremely great. And so we don't expect that there is ever going to be an instance or it's going to be extremely rare that we're going to use this threatened water category to put

something on the 303(d) list. So we need to define what threatened means. It means it's a foregone conclusion. Data strongly shows it's going to be impaired if we don't do something about it within two years. And how many instances are we going to find that happen?

CHAIRMAN HERRMANN: Do we say that in here any place, Phil?

MR. SCHROEDER: Well, we did mention the time

trend analyses, but we didn't really explain exactly how difficult -- how much data that really requires. It just -- it seems like if you were to kind of expand that portion of the document a little more, it would be kind of an unusual focus on one aspect, but we could, I mean, if you'd like for us to -- but I don't know that --

COMMISSIONER PERRY: I'm looking. Oh, there it is, threatened waters.

UNIDENTIFIED SPEAKER: (Inaudible.)

MR. SCHROEDER: We could try to use some more language like, you know, "It's beyond a shadow of a doubt" or something like that, but I don't know how else you'd explain that -- you know, it's a very rigorous test.

COMMISSIONER HARDECKE: I don't understand how you're going to find a situation where that occurs. I mean, if you're planning to dump something in the river, why don't

dump it?

MR. SCHROEDER: Well, that's obviously not what we're talking about here. What we're talking about here is data -- long-term data which indicates a very strong correlation of a -- an increasing pollution level, and that correlation is very strong. I mean, it's a very strong data graph, which people -- anybody looking at it can't deny, assuming again the data is credible, that the analysis was done appropriately, the plots were done appropriately, everything was done in accordance with scientific anal -- you know, analytical methods, and the graph is just compelling,

and it shows that every year it's consistent, there is a certain percentage of pollution increase in that river.

CHAIRMAN HERRMANN: I think your definition that you pointed to on page 256 gets the job done, in my mind. It's not just somebody's assessment that, Hey, maybe in a couple of years this is going to be -- but you're basing it on a time-trend analysis.

MR. SCHROEDER: Right. And we would present that time-trend analysis --

CHAIRMAN HERRMANN: Yeah.

MR. SCHROEDER: -- to the commission before we made that decision.

CHAIRMAN HERRMANN: Okay.

MR. WALKER: Well, on that issue, I was just going to add also that I think that the Department has been responsive and that definition definitely goes a long way of making it. I guess if anything, we wanted to clarify it, absolutely, that threatened waters added in the past would not -- should not be on the category 5 list because --

CHAIRMAN HERRMANN: Yeah, that has been the case in the past, I --

MR. WALKER: Yeah, I understand. And I actually applaud the Department because that definition does go a long way. I guess I was trying to push it over the finish line a little more, but -- and I --

CHAIRMAN HERRMANN: Okay. You have unknown pollutants?

MR. WALKER: Yeah, let's cover unknown pollutants as well.

COMMISSIONER PERRY: Before we move on, do we need a motion to change that?

CHAIRMAN HERRMANN: I don't think so.

MR.WALKER: I think that is a valuable discussion to have because the Department has been responsive -- or sensitive to that issue. And, frankly, I think you're right that it will be a limited universe that

will meet that, and they'll do the time-trend analysis and we'll find that, you know --

And the other thing about it is, just from a state law perspective, that we do have a state law that says if a water body is not impaired, it can't develop a TMDL, so it's -- that's going to be a conundrum that someone may have to address as well.

On unknown pollutants, let me -- this was not on the original list of topics. We want to address this, and I'll be brief, because, you know, Mr. Schroeder, in his opening remarks, noted that we need real data. We need real information. And he said and I -- we completely agree that we don't want to be an unnecessary burden on the community, on this Commission, and on the Department. It just seems to us that under the standard that listing waters for which the source has impairment has not been identified or is unknown,

fails that test. Because we think there is going to be an -- be a burden on the Department and on the communities to have to deal with these waters that are -- will be placed on a category 5 when the source is unknown, it's our position that the source of impairment should be known before water bodies are placed on category 5, and be more appropriately put, these on category 4C. It just seems like there must be a less cumbersome method for the Commission and the Department

to identify the source of the pollutant rather than listing it on category 5, which sets in motion other circumstances, which we shouldn't put in place until we know the source of the pollutant.

It's not that this water body is not of concern, it's that we ought to -- this Commission could direct the Department to do that investigation. The Department can allocate those resources, and all of that could be done without it being placed on the category 5, and that's the -- I think that would be the gist of our comments on that issue.

And the change that we would recommend on page 255 of the methodology is to add a third bullet point, which essentially just says that the causes of the nonattainment is unknown and not yet attributable to a discreet pollutant and/or pollution not the result from a pollutant.

Robert Brundage is not here, he directed that language. I agree with it and it just -- it was just from a common sense point of view, there ought to be an easier way

to make that decision about the source, other than placing this on a category 5, which, of course, will require the Department to find out the source.

COMMISSIONER PERRY: It looks like the first changes you proposed have been made.

MR. WALKER: That's entirely possible.

We drafted these some days ago.

COMMISSIONER PERRY: Okay. And then lead, zinc, manganese has been removed?

MR. WALKER: Yeah, we were working off the original --

COMMISSIONER PERRY: Okay. So then --

MR. WALKER: -- the original one.

COMMISSIONER HARDECKE: So the last one.

MR. WALKER: Methodology.

COMMISSIONER PERRY: That's the last one.

MR. WALKER: Not the original, but the one before this iteration. We're not working off the clean version you have in front of you. So in that sense, the only change we're really suggesting is that -- that last bullet point. That, and then for the reasons stated, that ought to be an easier way to determine the source, other than putting it in the category 5.

MR. WALKER: Now, you have to object to this one?

(Laughter.)

MR. DELASHMIT: My objection isn't on the

grounds for a regulation this time, though, so it's a little softer. But our guidance does discuss this specifically and what our recommendation is in our guidance, is that if a

specific use in the water body is not supported, aquatic life use or a recreational use, then that should be listed as impaired, even if the source isn't known, unless the State can show that it's not being caused by a pollutant. If there is other reasons, as Roger mentioned, besides pollutants, that something could be supported, that's what we ask. So just to clarify, that would be our position on that one.

MS. HOLLOWAY: Just a theory on the guidance. There is a reference, as John just explained, to most category 5 including impaired segment, if this specific pollutant has not been identified, and the guidance says yes, if the designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excludence on that. It must be listed unless the state can demonstrate that no pollutant causes or contributes to the impairment. If they cite flow and habitat alteration as examples, where there would not be a specific pollutant, but -- and then you would not necessarily have to put it on the impaired waters list.

COMMISSIONER PERRY: I guess you're distinguishing the difference between no pollutant and unknown pollutant?

COMMISSIONER HARDECKE: Read that -- Leslie,

would you read that last statement?

MS. HOLLOWAY: It's a, "Yes, if a designated use is not supported" --

MR. GALBRAITH: Leslie, could you read just a little bit louder?

MS. HOLLOWAY: Certainly.

MR. GALBRAITH: I'm sorry. Thank you.

MS. HOLLOWAY: "If a designated use is not supported and the segment is impaired or threatened, the fact that a specific pollutant -- the specific pollutant is not known does not provide a basis for excluding the segment from category 5. These segments must be listed unless the state can demonstrate that no pollutant or pollutants causes or contributes to the impairment or to establishing a TMDL for such segments, the pollutant causing the impairment must be identified. If the assessment of the new data and information demonstrates that the use impairment is not associated with a pollutant, it is attributable only to other types of pollution, e.g., flow or habitat alteration, the segment may be placed into category 4(c)."

COMMISSIONER HARDECKE: That almost supports that statement in my -- (inaudible.)

COMMISSIONER PERRY: (Inaudible.) My understanding is, you didn't know what it was, but it could be something. It has to be listed on 5 to get it into 4(c);

it would be caused by something other than a pollutant.

CHAIRMAN HERRMANN: I don't think our document says that. I think the guidance that Leslie just read says it succinctly, and should be --

COMMISSIONER HARDECKE: Include that in --

CHAIRMAN HERRMANN: -- the other part of the document.

MR. WALKER: Yeah, I think that the compromise might be that just to include that language from their guidance, so that there is -- it's not just a black and white issue. There is some thought that would go into that, so it's not just if you have an unknown, you put it on 4(c), but there are some options available under that language.

CHAIRMAN HERRMANN: Yeah.

Mr. WALKER: It largely supports what John is saying, but it's not as absolute as what he said.

COMMISSIONER PERRY: So where do we want to put that guidance?

CHAIRMAN HERRMANN: The third bullet.

COMMISSIONER PERRY: Under 4(c)?

CHAIRMAN HERRMANN: Yeah. Does that satisfy you, Leslie? Okay.

COMMISSIONER PERRY: Yeah, Leslie has already read it into the record.

MS. HOLLOWAY: Twice.

COMMISSIONER PERRY: So I move that which --

Leslie, are we ready for a motion?

CHAIRMAN HERRMANN: Yes.

COMMISSIONER PERRY: I move that that information from the guidance document, which Ms. Holloway has read into the record twice, be adopted as a third bullet point under 4(c).

CHAIRMAN HERRMANN: On page 255.

COMMISSIONER PERRY: Page 255.

CHAIRMAN HERRMANN: Okay.

COMMISSIONER HARDECKE: Second.

CHAIRMAN HERRMANN: Moved and seconded. Any **discussion? Questions?**

Please call for the vote, please, Darlene.

COMMISSIONER KELLY: Yes.

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

CHAIRMAN HERRMANN: Yes.

That concludes all of the cards we do have and don't have.

And, Trent, you have something else?

MR. STOBER: I was here before lunch. I just want to go back to the statistical side of things for a

little bit, if you don't mind.

UNIDENTIFIED SPEAKER: (Inaudible.)

MR. STOBER: No, but actually there was -- and I just talked to John a little bit, he'd feel more comfortable, I guess, if there was a motion made to allow him to change

the examples that are included below that appendix B1, so that it's reflective of the changes to table B1.

COMMISSIONER PERRY: You know, I had that on my paper to include in my motion, but I don't think I put it in the motion.

CHAIRMAN HERRMANN: Okay. Are you moving it now?

COMMISSIONER PERRY: Spirits a moving.

I move on the changes that were made on page 272, with regard to the hypothesis test, that those examples be changed to comply with the amendments we made.

CHAIRMAN HERRMANN: Second?

COMMISSIONER HARDECKE: Second.

CHAIRMAN HERRMANN: Moved and seconded.

Any discussion? Questions?

Please call for the vote, please, Darlene.

COMMISSIONER KELLY: Yes.

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

CHAIRMAN HERRMANN: Yes.

Motion passes. Anything else to discuss or cuss about our methodology document?

COMMISSIONER HARDECKE: Mr. Chairman, I have one in regard to -- is Phil going to go through the rest of the six -- is there any -- or has that all been done? I believe

that's all --

COMMISSIONER PERRY: I'd like to talk about the burden of proof.

MR. GALBRAITH: -- been woven into the other discussions.

CHAIRMAN HERRMANN: Yeah.

COMMISSIONER HARDECKE: But we haven't touched on the burden of proof, and I had worked -- talked to John and Phil earlier about the --

MR. GALBRAITH: Table B1?

COMMISSIONER HARDECKE: -- in table B1 "Must prove water is unimpaired and the perception that that presumes that water is impaired unless proven otherwise," and we -- John had worked up some language to replace that. They indicated that that isn't really what they meant, and so I said, Well, I think we need to change that -- if that isn't what you mean, we need to change it to state what we do mean. So, Phil or John, would you want to address that and give the

language?

MR. FORD: I believe it's 243. Is that the right version?

COMMISSIONER HARDECKE: 243, yes.

MR. FORD: Okay. That's table B1 in the appendix, where we talk about the --

MR. GALBRAITH: John, could you nudge over towards the microphone?

MR. FORD: I sure will. We're going to

change the wording under the column that says "Null hypothesis burden of proof." What we're proposing is from the column title to delete the words "Null hypothesis" and remove the appen -- the -- just so it will just say "Burden of proof" there, no marks around it. And then everywhere where it says, on page 243, under that column, "The water" -- the -- it says, "Must prove water is impaired." We're changing that wording to say "Data is held to a higher level of proof." And where it says "proof" -- "Must prove water or tissue is not impaired," we're replacing that with "Data is held to a lower level of proof." And so everywhere that we apply a hypothesis test, as is noted in the hypothesis test column, we would be making that wording substitution.

COMMISSIONER PERRY: I don't think I understand the terminology higher and lower level of proof.

MR. FORD: I guess the concern was -- Commissioner Hardecke's concern was that if you read that language, it looks like that's a Department policy that we're --

COMMISSIONER PERRY: That you're trying to --

MR. FORD: -- we're making a presumption that all waters are impaired unless proven otherwise. And so we tried to remove that language and get it to something that's more statistical and something that doesn't look like a policy decision.

COMMISSIONER PERRY: I agree with his stand.

My problem is, I'm not sure how categorizing levels of proof by higher and lower gets us there. I do agree that there is a burden of proof here that I think should be shifted. You know, it's kind of like proven guilty before you're proven innocent.

MR. FORD: I guess the higher level of proof would be the upper 60 percent confidence limit as it's proposed now and the lower level of proof would be the 60 percent lower confidence limit.

COMMISSIONER PERRY: Is that level of proof?

MR. FORD: That's what we're talking about, because it relates to the hypothesis testing.

MR. SCHROEDER I would perhaps suggest

that we use a little bit different language, make it square up with the statistical procedure there.

COMMISSIONER PERRY: Like lower confidence level.

MR. SCHROEDER: Exactly. Use must prove water through comparison with the upper confidence level or must prove water is unimpaired by use of the lower confidence level. That way people are clear as to how we're using our statistical analysis to derive a conclusion.

COMMISSIONER PERRY: Would you like to put that in form of a motion that I could propose?

MR. SCHROEDER: Just use -- wherever it says "Must prove water is impaired" -- it says "Must prove water is impaired using the higher confidence level" or

comparison -- or "comparing the standard with the higher confidence level." Where it says "unimpaired" it would say "Must prove water is unimpaired or not impaired by comparing the standard to the lower confidence level."

COMMISSIONER HARDECEKE: That still alludes to the presumption that it's impaired, unless proven otherwise.

MR. SCHROEDER: Well, it's just using this statistical analysis that we've all discussed already. Basically, it's saying that the -- there is a higher burden of proof when human health is at risk. There is a lower

burden of proof when --

COMMISSIONER HARDECKE: That's what we need to state.

COMMISSIONER PERRY: Well, that's what we said.

MR. SCHROEDER: That's what we said before. The people may not be able to understand what that means.

COMMISSIONER PERRY: We can tie that to a statistic that we've already explained.

MR. SCHROEDER: Yeah. But the confidence level is the next column over, where it says point .4 in some cases, but you're -- but we don't explain whether that's the upper confidence level or the lower. What we could do is just put upper or lower in that column.

COMMISSIONER PERRY: Could you call it --

instead of "burden of proof" call it "confidence level"?

MR. SCHROEDER: Right. That's what we were suggesting, just the upper confidence level or lower confidence level.

COMMISSIONER PERRY: Oh, and I'm suggesting that the title at the top of it, instead of where it says "Burden of proof" be called "Confidence level."

MR. SCHROEDER: Oh, sure.

COMMISSIONER PERRY: All right.

MR. FORD: confidence(Inaudible.)

COMMISSIONER PERRY: Or confidence limit?

MR. SCHROEDER: (Inaudible) -- identified where we're trying to prove the water is impaired, we're using the upper confidence limit. Where we're trying to prove that it's unimpaired, we're using the lower confidence limit.

COMMISSIONER HARDECKE: (Inaudible.) I'm sorry. Would it help to put a foot note with the statement that you made earlier that we're trying to hold the human health to a higher level than the other uses, that would help clarify it.

MR. SCHROEDER: That would help the reader understand why there is a difference in that column.

COMMISSIONER HARDECKE: Right. Right.

COMMISSIONER PERRY: I guess there is two ways we could actually give them the actual wording or instruct the Department to make the corrections in accordance with this intent.

CHAIRMAN HERRMANN: Yes, that's the --

COMMISSIONER PERRY: Okay. I make a motion that we direct the Department to correct that column to be more indicative that it read "Confidence level" and that those things under that be indicated as upper or lower

confidence limits and to add a foot note explaining that procedure.

MR. SCHROEDER: Upper confidence level is used when looking at human health criterion.

COMMISSIONER PERRY: Right.

MR. SCHROEDER: Lower is used for all other criterion.

COMMISSIONER PERRY: To include the clarification that you just made.

COMMISSIONER HARDECKE: Second.

CHAIRMAN HERRMANN: Okay. Moved and seconded. Discussion? Questions?

MR. GALBRAITH: Can I clarify the motion? I'm not sure that they all got on the tape. The Commission would like this table clarified so; one, it doesn't -- the statements don't -- they're not policy judgments that we assume all waters are impaired until proven otherwise, that's your first concern.

COMMISSIONER HARDECKE: Right.

MR. GALBRAITH: And, second, that we clarify that we have an upper confidence limit for human

health protection being that .40 and that we have a lower confidence limit of .4 below the sample mean for non -- for all others.

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COMMISSIONER HARDECKE: Right.

COMMISSIONER PERRY: That is the intent of my motion.

MR. GALBRAITH: Okay.

CHAIRMAN HERRMANN: Okay. Nothing else?

Call for the vote, please, Darlene.

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

COMMISSIONER KELLY: Yes.

CHAIRMAN HERRMANN: Yes.

Motion passes.

Anything else?

Okay. We'll now vote to approve the original motion which was to vote on the document as amended by the foregoing votes.

COMMISSIONER HARDECKE: Do you need another motion?

CHAIARMAN HERRMANN: Yes.

COMMISSIONER PERRY: We don't need --

COMMISSIONER PERRY: No.

CHAIRMAN HERRMANN: Oh, no, no, no.

COMMISSIONER PERRY: We have a motion.

CHAIRMAN HERRMANN: We're going to vote on it.

COMMISSIONER PERRY: Because Ed made the

motion and he --

CHAIRMAN HERRMANN: Yeah. Yeah. Right. Right.

COMMISSIONER PERRY: So we just have to call for a vote.

CHAIRMAN HERRMANN: Okay. Would you, please, call for the vote, Darlene?

COMMISSIONER KELLY: Yes.

COMMISSIONER PERRY: Yes.

COMMISSIONER HARDECKE: Yes.

CHAIRMAN HERRMANN: Yes.

Motion passes.

Anything else?

COMMISSIONER PERRY: Yes, I have one comment.

CHAIRMAN HERRMANN: Yes.

COMMISSIONER PERRY: As having said, I think it was two years ago when we had a methodology document that was first proposed that was brought to this Commission, and we had all sorts of people jumping up and down yelling and screaming, that we have developed a process that I think has brought us a much finer document, and I salute all of you who worked so hard for doing such a nice job and making it clear to us. Thank you.

CHAIRMAN HERRMANN: I agree.

Yes, Roger?

MR. WALKER: (Inaudible.)

CHAIRMAN HERRMANN: I could only imagine how much confusion we would have had, had we tried to do this by telephone, how much, not only confusion but consternation.

UNIDENTIFIED SPEAKER: (Inaudible.)

CHAIRMAN HERRMANN: That's right.

Thank you all.

Meeting is adjourned.

CERTIFICATE OF REPORTER

STATE OF ILLINOIS)
) SS
COUNTY OF CLINTON)

I, CAROL A. BECKMANN, a Certified Shorthand Reporter and Notary Public, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action.

Carol A. Beckmann, CSR

Notary Public in and for
the State of Illinois

My Commission expires 1-17-2009.

Respectfully Submitted,

Edward Galbraith
Director of Staff